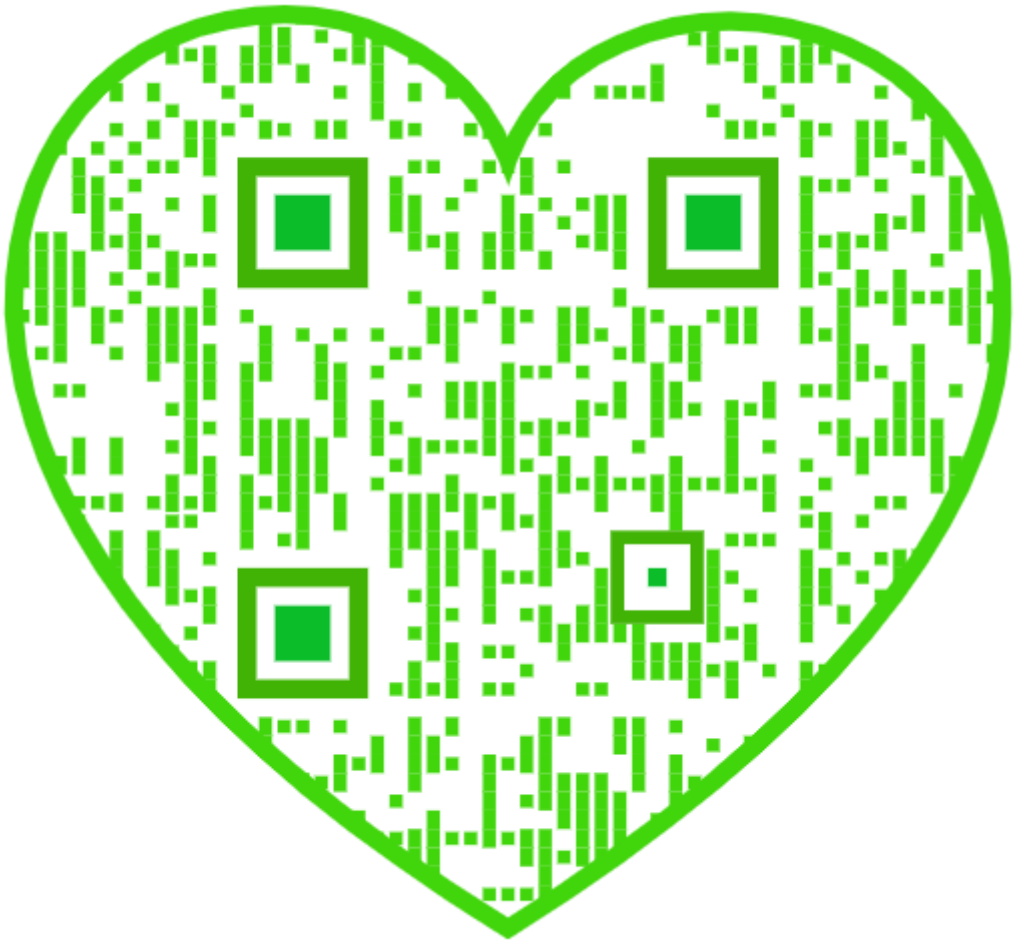

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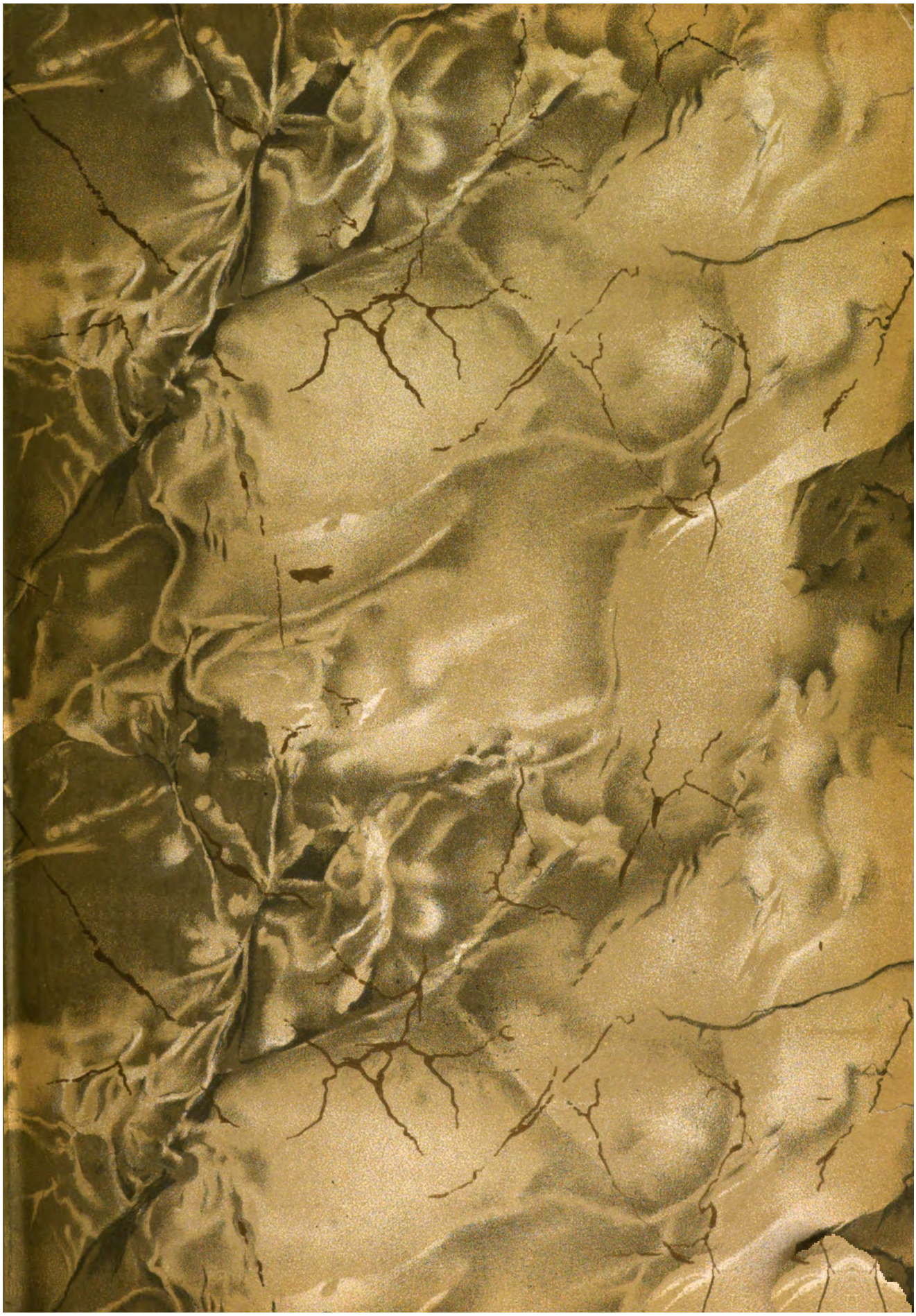

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KEY TO PRONUNCIATION.

ã	far, father
ā	fate, hate
a or ă	at, fat
ā	air, care
ạ	ado, sofa
â	all, fall
ch	choose, church
ē	eel, we
e or ĕ	bed, end
ė	her, over; also Fr. *e*, as in *de; eu*, as in *neuf;* and *œu*, as in *boeuf, cœur;* Ger. *ö* (or *oe*), as in *ökonomie.*
ę	befall, elope
ẽ	agent, trident
ff	off, trough
g	gas, get
gw	anguish, guava
h	hat, hot
h or H	Ger. *ch*, as in *nicht, wacht*
hw	what
ī	file, ice
i or ĭ	him, it
î	between e and i, mostly in Oriental final syllables, as, Ferid-ud-din
j	gem, genius
kw	quaint, quite
ṅ	Fr. nasal *m* or *n*, as in *embonpoint, Jean, temps*
ñ	Span. *ñ*, as in *cañon* (căn'yŏn), *piñon* (pēn'yŏn)
ng	mingle, singing
nk	bank, ink
ō	no, open
o or ŏ	not, on
ô	corn, nor
ȯ	atom, symbol
o͝o	book, look
oi	oil, soil; also Ger. *eu*, as in *beutel*
ö or oo	fool, rule
ou or ow	allow, bowsprit
s	satisfy, sauce
sh	show, sure
th	thick, thin
t͟h	father, thither
ū	mute, use
u or ŭ	but, us
o͞o	pull, put
ü	between u and e, as in Fr. *sur*, Ger. *Müller*
v	of, very
y	(consonantal) yes, young
z	pleasant, rose
zh	azure, pleasure
′(prime), ″(secondary)	accents, to indicate syllabic stress

ENCYCLOPEDIA AMERICANA

V

VENICE, vĕn'ĭs, (Ital., *Venezia;* Ger., *Venedig*), northern Italy, a seaport city and capital of a province in the compartment or division of Venetia, situated on about 120 islands in a lagoon or shallow bay of the Adriatic Sea (Gulf of Venice), north of the mouths of the Adige and Po, 150 miles east of Milan and 70 miles west-southwest of Trieste. The city has a compact, roughly elliptical form, the greater number of the islands being close together and separated only by narrow canals (*rii*), about 175 in number, over which 378 bridges have been constructed. The city is about two and a half miles from the mainland, with which it is connected by a railway bridge of 222 arches. On the sea side, separating the lagoons from the open sea, are long narrow stretches of sand-hills, known as *lidi,* strengthened in places by masonry bulwarks. Both the *lidi* and the coast behind the town are defended by strong forts. Besides the canals, which to a large extent take the place of streets in Venice, there are numerous narrow lanes (*calli*) between the houses. The broadest street is the Corso Vittorio Emanuele in the north, and the most important business street is the Merceria, lined by handsome shops, which opens into the Piazza San Marco. The buildings are mostly erected on piles. The main part of the city is traversed by the Grand Canal, about two miles long and from 33 to 66 yards in width, which proceeds from the southeast to the railway station in the northwest by a winding course, somewhat like a letter S. It is lined along its whole length on both banks by a series of splendid palaces and houses. It is crossed by the famous Rialto bridge, in the centre of the city, built in 1588–91 and consisting of a single marble arch, and by two iron bridges. The tramways and cabs of other towns are represented in Venice by gondolas, barcas, steam launches and the steamers of the Societa Veneta Lagunare, which ply on the canal. The chief square is the Piazza San Marco (Saint Mark is the patron saint of Venice) on the southeast, continued by the smaller Piazzetta to the bank of the Canale di San Marco, and lined by some of the chief buildings of the city. It is the fashionble promenade of the Venetians and the centre of the city's life. Of islands not forming part of the main mass of the city the chief are Giudecca, on the south, separated from Venice proper by the Canal della Giudecca; Isola di San Giorgio Maggiore, immediately east of the former, and separated from Venice by the broad Canale di San Marco; Isola di San Pietro, east of the main group of islands; Murano, a mile and a half to the north, with an ancient glass industry; Cemetery Island, to the northeast; Burano, to the northeast, with lace-factories; Torcello, to the northeast, with an interesting cathedral; San Lazzaro, to the southeast, with an Armenian Mechitarist monastery; and San Servolo, to the southeast, with the lunatic asylum of the province. Of the sand-banks or *lidi* already mentioned the Lido di Malamocco fronting the city across the lagoon is a very popular well-equipped resort largely patronized during the bathing season.

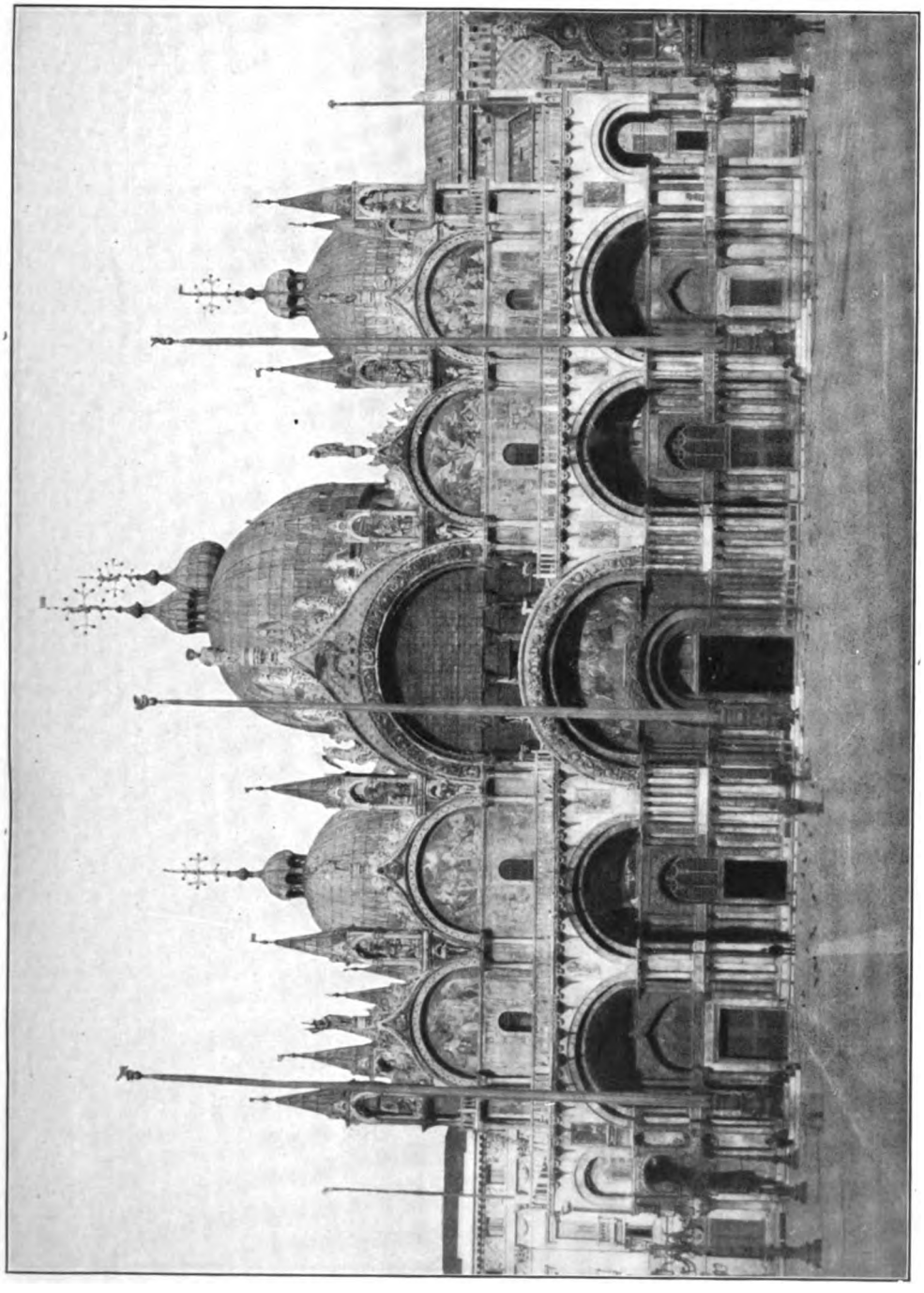
Churches.— The great church of Venice is the cathedral of Saint Mark, on the east side of the square of the same name. It was begun in 830 as a brick basilica in Romanesque style and was rebuilt after the fire in 976. It was elaborately decorated and transformed into a Byzantine building in the succeeding two or three centuries, and in the 15th century Gothic elements were added. In its present form it is a Greek cross surmounted by a dome at the end of each arm and one in the centre, and it contains about 500 columns, mostly in Oriental style, with richly ornamented capitals. The interior is adorned with a great profusion of splendid mosaics and also by other artistic productions of great beauty, such as the bronze monument of Cardinal Zeno and the Pala d'Oro, an altar-piece exquisitely worked with jewels on plates of gold and silver. Near the cathedral stood till its fall in 1902 the square Campanile, or bell-tower, 322 feet in height, with fine bronze statues and gates, and here is the clock-tower, with two bronze giants for striking the hours. The Campanile has been rebuilt. Among other churches are the following: Saints Giovanni e Paolo, a splendid Gothic domed building erected in 1340–1430, containing the burial-vaults of the doges and many magnificent monuments; San Maria Glorioso dei Frari, a beautiful cruciform structure in Italian-Gothic style, erected in 1250–1338, containing some splendid monuments and several of the finest works of Titian and Giovanni Bellini; San Salvatore, completed in 1534 (façade later) and recently restored, containing Titian's 'Annunciation'; Madonna dell' Orto, with a beautiful façade in late Gothic style and containing many fine pictures by Tintoretto and others; San Zaccaria, built in 1457–1515 in

the style of the Gothic-Renaissance transition, with fine pictures; San Maria Formosa, an early cruciform church, often rebuilt, with good pictures by Palma Vecchio and others; San Maria dei Miracoli, erected in the style of the Early Renaissance in 1481 (restored), adorned with marble outside and beautifully decorated in the interior; San Giacomo di Rialto, the oldest church of the city; San Rocco (1490, restored 1725), containing many of Tintoretto's works; San Sebastian (1506–18, restored), containing the tomb of Paolo Veronese and fine paintings by him; San Maria della Salute, erected in 1631–32 in memory of the plague, including works by Titian and others; San Giorgo Maggiore, on the island of the same name, begun by Palladio in 1560, with a very beautiful interior; Il Redentore, on the Giudecca, erected by Palladio in 1576; San Giovanni Crisostomo, Renaissance style, containing fine painting by Giovanni Bellini and Sebastiano del Piombo; San Marciliano, notable for works by Titian and Tintoretto; San Caterina, with a splendid altar-piece by Paolo Veronese; the Jesuits' church, in baroque style (1715–30), and splendidly decorated, with a fine altar-piece by Titian; San Giorgio degli Schiavoni, with Renaissance façade and containing fine paintings by Carpaccio; San Pietro di Castello, on San Pietro Island, the cathedral of the city till 1807; San Giovanni Elemosinario (1527), containing a splendid altar-piece by Titian, etc. There are also churches for Anglicans, Scottish Presbyterians, Waldensians, German Protestants, Greek Catholics, Armenians, Jews, an Italian Free Church, etc.

Palaces.— The Procuratie Vecchie, so called because the procurators of the republic formerly dwelt in them, is an imposing group of buildings on the north side of the Piazza San Marco, and directly opposite them are the Procuratie Nuove, which together with the magnificent library building now form the royal palace. The Procuratie Vecchie were built in 1496–1520, and the Procuratie Nuove were begun in 1584. The library was begun by Sansovino in 1536 and is one of the finest non-ecclesiastical buildings in Italy. Its interior is adorned with ceiling and wall paintings by Paolo Veronese, Tintoretto, Schiavone and others. Facing the old Library, on the opposite (eastern) side of the Piazzetta, stands the Palazzo Ducale or Palace of the Doges, which was first erected in 800 and has been rebuilt in styles of ever-increasing grandeur after five destructions. The exterior consists of two arcades, one above the other, and is adorned with colored marbles. It was restored in 1873–89. The Porta della Carta, a portal next to the cathedral, the incomplete court, and the flight of steps (Scala dei Giganti) leading up to the palace deserve special mention. The interior is very fine and contains a splendid collection of works by Tintoretto, Paolo Veronese and other great Venetian masters, including the 'Paradise' of the first named, which is the largest oil-painting in the world. The building also includes the Library of Saint Mark, with its many manuscripts and other treasures, and an archæological museum. The famous Bridge of Sighs (Ponte dei Sospiri) leads from the Palace to the Prigioni Criminali, or prison for ordinary criminals, built in 1512–97 and still in use. The palaces along the banks of the Grand Canal are of all styles from Romanesque to Late Renaissance, among them being the following: Palazzo Corner della Cà Grande (1532), now the seat of the prefecture; Palazzo Grimani (in Renaissance), a very fine building, now containing the Court of Appeals; Palazzo Farsetti and Palazzo Loredan (Romanesque), both now used by the municipal authorities; Palazzo Rezzonico (17th and 18th centuries), in which Robert Browning died; Palazzo Foscari (Gothic), now containing a higher commercial school; Palazzo Cappello-Layard, the former residence of Sir H. A. Layard; Palazzo Bernardo, said to be the oldest building of the city, now a mosaic factory. Fondaco de' Tedeschi, a German warehouse from the beginning of the 13th century, now the chief post and revenue office; Palazzo Cà Doro (Gothic), now the French consulate; Palazzo Vendramin Calergi (Early Renaissance), one of the finest of all, the place where Wagner died; Paul de Camerlenghi (Early Renaissance), the former repository of the treasures of the republic; and the Fondaco de' Turchi (Romanesque), once a Turkish warehouse, now containing the municipal museum.

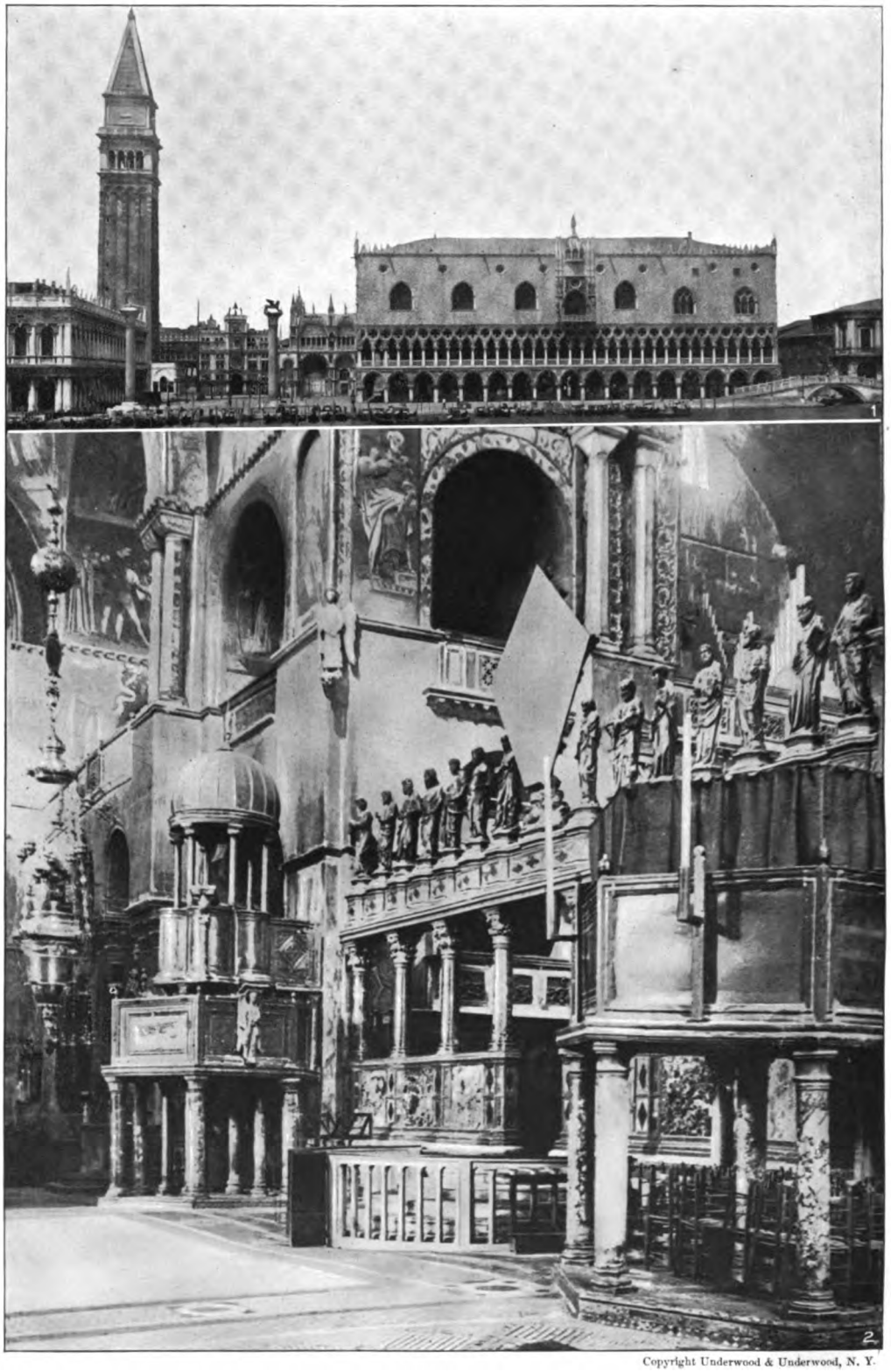
Monuments.— These include: in the Piazza San Marco, the pedestals of the flagstaffs (1505) and the marble sarcophagus, supported by lions, of Daniele Manin, the head of the short-lived republic of 1848; in the Riva degli Schiavoni, a marble-paved quay along the north bank of Saint Mark's Canal, an equestrian statue of Victor Emmanuel II (1887); in the Campo San Bartolommeo, a bronze statue of Carlo Goldoni (1883); in the Campo San Fosca, a bronze statue of Fra Paolo Sarpi (1892); besides the church of Saints Giovanni e Paolo and equestrian statue of Bartolommeo Colleoni, modeled by A. Verrocchio (d. 1488) and cast in bronze by A. Leopardo, on a marble pedestal designed by the latter (1490–05), considered by Ruskin the finest work of sculpture in the world; south of the arsenal, Venvenuti's monument (1885) in commemoration of the service of the soldiers in the inundation of 1882; a bronze monument to Garibaldi (1887) at the entrance to the public gardens; and a marble statue of Niccolò Tommaseo (1882) in the Campo Francesco Morosini.

Educational Institutions, Collections, Gardens, etc.— The Accademia di Belle Arti, at the southern end of the older iron bridge over the Grand Canal, contains a priceless collection of paintings by Venetian masters, including Titian (his masterpiece is here), Paolo Veronese, Giovanni and Gentile Bellini, Palma Vecchio, Rocco Marconi, Pordenone, Cima da Conegliano, Paris Bordone, Carpaccio, Tintoretto and Tiepolo. The Reale Istituto di Belle Arti is situated beside the academy. The Royal Institute of Sciences, Arts and Industry occupies one of the palaces on the Grand Canal. The Museo Civico Correr, in the Fondaco de' Turchi, comprises both the former municipal and the Correr collections. The town also has lyceums and gymnasia, an Armenian educational institute, a Seminario Patriarcale, containing some sculptures and pictures, technical schools, a higher commercial school, school of industrial art, a deaf-mute school, conservatory of music, athenæum, observatories and other similar in-



The Cathedral of Saint Mark

VENICE



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1 Campanile and Doge's Palace

2 Saint Mark's, Interior View

stitutions. The Giardini Pubblici, in the southeast, were laid out by Napoleon in 1807 on the site of monasteries which he caused to be demolished; other gardens are the Giardino Reale, behind the royal palace, and the Giardino Papadopoli, at the northern end of the Grand Canal. The chief theatre of the town is La Fenice.

Public and Commercial Buildings, etc.— Among these are: the archives building, besides the Frari church, containing about 14,000,000 documents, from 883 downward; the Zecca or mint (1536), besides the royal palace; the customs-house, at the southeast end of the Grand Canal; the branch of the Banca d'Italia in the Palazzo Manin; the Monte di Pietà or pawnoffice, in the Palazzo Corner della Regina; the arsenal, in the south of the city, with stocks for shipbuilding and large graving-docks; the chamber of commerce; telegraph office; military prison; barracks, etc. New waterworks were completed in 1890. The public hospital is a large building beside the church of Saints Giovanni e Paolo, and the city also contains a military and a naval hospital, lunatic asylums, orphanages, a home for foundlings, houses of correction and other institutions of a like kind.

Manufactures, Trade, etc.— In addition to the glass and lace industries on the islands of Murano and Burano, there are in the city manufactures of glass and glass beads, silk-stuffs, cottons, woolens, tobacco, soap, wax, furniture, gold and silver wares, matches, artificial flowers, machinery, torpedoes, etc. Shipbuilding is also a growing industry. The trade of Venice, though less important than in the 15th century, has been steadily growing for many years and is considerable, the port now, in normal times, ranking second to Genoa in the commercial importance of the kingdom. Vessels drawing 27 feet can reach Venice; a 30-foot channel has been dredged. During the Great War the port was closed. Vessels enter from the sea through the Porto Malamocco and the Porto Lido and there is considerable dock and wharf accommodation in the Bacino della Stazione Marittima. Much modern improvement has been instituted in Venice, including careful sanitation, a new water supply from mainland sources by means of an aqueduct, and an electric lighting and industrial supply, generated by the Cellina torrent near Belluno and transmitted to the city.

History.— The foundation of Venice is attributed to the inhabitants of the surrounding districts, who fled from the cruelty of Attila the Hun and took refuge among the islets off the mouth of the Brenta. Here, about the middle of the 5th century, they founded two small towns called Malamocco and Rivoalto and devoted themselves to commerce. In 697 Pauluccio Anafesto was elected the first doge or duke. In 819 the seat of government was transferred from Malamocco to Rivoalto (Rialto), and the adjacent islands were connected by bridges. The Crusades (1096–1271) gave lucrative employment to the shipping of the Venetians and enabled them to make large additions to their territory. In 1204 the Doge Enrico Dandolo conquered Constantinople with the aid of the French Crusaders. In consequence of this the Byzantine Empire was divided and the coast districts of the Adriatic and the Levant, together with numerous islands, including Candia, fell to the share of Venice. Under the successors of Dandolo, Genoa contrived to wrest from Venice her eastern conquests. In 1355 the Doge Marino Falieri, who plotted the overthrow of the aristocratic form of government, was beheaded. During the dogeship of Andrea Contarini (1367–82) Padua, Verona, Genoa, Hungary and Naples leagued themselves against Venice, which, after a severe struggle, lost all its possessions on the mainland. The tide of fortune, however, soon set again in favor of the Venetians. In 1386 they captured Corfu, Durazzo, Argos, etc.; in 1405 their general, Malatesta, conquered Vicenza, Belluno, Feltre, Verona and Padua; in 1408 they gained possession of Lepanto and Patras, and in 1409 of Guastalla, Casalmaggiore and Brescello. In 1416 the Venetian fleet under Loredan defeated the Turkish at Gallipoli and in 1421 subjugated all the towns on the Dalmatian coast. The close of the 15th century is the culminating point in the history of Venice. It had a population of 200,000, and was the centre of the entire commerce of Europe. With the beginning of the 16th century its power began to decline. Its commerce was gradually superseded in a great measure by that of the Portuguese in consequence of the discovery of the new sea-route to India. A league to subdue the republic was formed at Cambrai in 1508 between Pope Julius II, the emperor of Germany and the kings of France and Spain. Once again all its possessions on the mainland were taken from it. The work of destruction was all but completed by warfare with the Turks, at intervals from 1649 to 1718, during which the Morea and the islands of Cyprus and Candia were lost and with them the ascendency in the Levant. After the French Revolution it refused to enter into an alliance with Bonaparte and the French took possession of the city in 1797. It subsequently became part of the Austrian Empire, of Napoleon's kingdom of Italy and of the Lombardo-Venetian kingdom under Austria, in which last it continued from 1815 to 1866. A revolution broke out in 1848, when the citizens endeavored to reestablish their ancient form of government under the Presidency of Manin, but after suffering from a 15 months' siege by the Austrians and from internal dissension, it was compelled to capitulate. In consequence of the misfortunes of Austria in her war with Prussia in 1866 the city and province were ceded to Napoleon III, under whose auspices they were united by a plebiscite to the kingdom of Italy. During the Great War Venice was repeatedly bombed by hostile aviators and some public buildings were damaged and many priceless works of art were removed to places of safety. During the great Austro-German offensives of 1916–17 hostile forces penetrated to within little more than 20 miles of the city and threatened to debouch on the Venetian plain. A large area between Venice and the mouth of the Piave was flooded, in order to provide against the Teutonic advance. The greatest names in Venetian art are those of the Lombardi (15th and 16th centuries), Jacopo Sansovino (1477–1570), Andrea Palladio (1518–80), Vincenzo Scamozzi (1552–1616) and Baldassare Longhena (1604–75) in architecture; the Massegne (about 1400), the Buon (15th century), the Rizzi (15th century),

the Lombardi Alessandro Leopardi (d. 1522) and Jacopo Sansovino in sculpture; the Vivarini (15th century), Iacopo Bellini (d. 1464), Carlo Crivelli (d. 1493), Gentile Bellini (1427–1507), Giovanni Belini (1428–1516), Vittore Carpaccio, Cima da Conegliano, Giorgione (d. 1510), Jacopo Palma Vecchio (1480–1528), Tiziano Vecelli (Titian, 1477–1575), Sebastiano del Piombo (1485–1547), Rocco Marconi, Giovanni Antonio da Pordenone (1483–1539), Paris Bordone (1500–70), Jacopo Tintoretto (1518–94), Paolo Veronese (1528–86), Palma Giovane and Giovanni Battista Tiepolo (1693–1770) in painting. Consult Ruskin, 'Stones of Venice'; Hazlitt, 'The Venetian Republic'; Mrs. Oliphant, 'The Makers of Venice'; Grant, Allen, 'Venice'; Brown, 'Studies in the History of Venice' and 'Venice: a Historical Sketch'; Douglas, 'Venice and her Treasures'; Hazlitt, 'The Venetian Republic'; Hutton, 'Venice and Venetia'; Motmenti, 'History of Venice'; 'Venice in the Golden Age'; 'Decadence of Venice'; Wiel, 'Venice' in the 'Story of the Nations' series.

VENICE, Bank of. The history of this remarkable institution forms one of the most instructive chapters in the annals of money, finance and banking. In 1171 the government of Venice, needing money to pay the expenses of a war upon which hung the destinies of the republic, plundered the treasury of its coins and bullion belonging to the goldsmiths or bankers who had deposited those species in the mint and exchequer, to the amount of about 10,000,000 ducats. Unlike Genoa (see GENOA, BANK OF), Venice paid its creditors, not by pledging the revenues of the state, nor by surrendering its autonomy to them, but by employing its power and authority to create an artificial bank money more valuable than the gold and silver coins or bullion of which it had despoiled the bankers. This bank money did not consist of metal or of paper currency nor indeed of anything ponderable or portable, but merely of the registration in a book of so many artificial or imaginary ducats, representing neither coins nor currency notes, as were made by law the only medium capable of liquidating bills of exchange.

The state opened a chamber of loans (Camera degl' Imprestiti), giving credit on its books to each of the parties it had despoiled for the amount of their loss, with interest at 4 per cent per annum. This interest being always punctually paid, it gave the creditors or assigns a permanent and reliable fund consisting of the right to demand and receive 4 per cent per annum forever. By making the assignment payable only in credits on the books of the chamber or bank, familiarly known as the Giro, it established a permanent income for the Giro, of which it could not be deprived so long as the state survived. This interest and the profits and inheritances presently to be described constituted the capital of the bank. The latter sources of income became in time so great that the allowance of the 4 per cent interest was discontinued as superfluous.

Between the plunder of Asia Minor by the Crusaders, of the Byzantine Empire by the Veneti and Latins, and the plunder of Moorish Spain by Genoa, Castile, Arragon and others, the stock of metallic money in Europe had fallen so low that the degradation, debasement and clipping of coins had become common. No assurance was to be had for the honest payment of a bill of exchange. By instituting an imaginary money which could neither be clipped or debased; by reforming its own coinage and keeping it constant; by coining gold ducats (in 1252) containing 54 English grains of fine gold; by establishing a fixed legal relation between its coined money and its imaginary money, and by other measures mentioned below, the Giro gradually became a reliable centre of exchange, not only for the commercial transactions of Venice, but also for those of other states. This movement received great impetus both from the extent of Venetian commerce, the supremacy of its navy and the rigidity and impartiality of its jurisprudence.

In 1423 Venice took that important step which rendered the Giro the clearing-house for practically all Europe. It required that all bills of exchange drawn upon Venice should be paid only at the bank. Such payment was made by debiting the bill-acceptor's account so and so many ducats and adding an equal sum of imaginary ducats to the credit of the bill-holder, who thus became the proprietor of so and so many ducats at the bank.

In presenting his bill of exchange for payment the state required that the holder should effect the transaction in person, or by proxy. The transfer was made in the presence of two bookkeepers. No coins or any right to coins was involved in the transaction. The Giro kept no coins or circulating money. No endorsement was recognized or accepted. Therefore, the possession of the bill could not benefit a robber, whether marauding prince or footpad; it could not be passed around and used as money. Payable only at the Giro and in Giro credits, it was valueless elsewhere, valueless in other hands than those of the drawee. It was only money in and out of the Giro and only money in Giro debits and credits. This system made of the Giro a clearing-house for the entire civilized world. In this sense it was used all over Europe and its colonies.

The government of Venice prohibited the circulation of any foreign coins or paper or leather money in its dominions. «It prohibited dealing in foreign coins by private or public banks.» All foreign coins were required to be sold to the mint, where they were valued, paid for according to their metallic contents and recoined into Venetian pieces. All contracts made payable in coins (none of which contracts concerned the Giro) were to be liquidated at the rates for coins named in the laws. The penalties for infraction extended to entire confiscation.

The government of Venice brooked no interference from the pontifical government. It admitted no ecclesiastics into the management of the Giro. It refused to permit the Inquisition to be set up anywhere in the dominions of Venice: a striking contrast with the policy of Genoa.

The Giro seldom received or paid out coins or paper money. It dealt only in its own imaginative money by inscribing debits and credits in its books. All coin transactions were turned over to the depository mentioned further on.

For its transfers of accounts it made no charge.

Those who desired a safe place in which to deposit coined money and draw upon it by transfer of account (as in the Giro) were served by a branch department or depository strongly built and well guarded which was established for these purposes by the Giro, but without any further connection between the two institutions. The artificial money of the Giro was never mingled or confused with the actual money (coins) of the depository.

Some authorities have imagined that the "Unit" of the money of account (the artificial or imaginary money of the Giro) was the ducat. This is somewhat misleading. Actual ducats seldom or never went into or out of the Giro. The ducat was the integer, not the "unit" of its money. Its unit of money was the whole amount of credits (or debits) on its books, multiplied by their rapidity of circulation from one account to another. This rapidity or velocity is conjectured to have been about twice a day, at least during its halcyon period.

The depository (caisse de comptant) was under the influence of finance, commerce and speculation: the Giro was independent of them all. The fund of the depository "would be exceedingly fluctuating, because it would correspond with the changes of trade in each year and from year to year. It kept pace with the exigencies of commerce; was perfectly elastic and impressionable to the movements of trade." This depository failed three times, in 1453, 1600 and 1717. The Giro being independent both of commerce, finance and trade, paid no heed to their exigencies. Its fund was neither elastic nor impressionable. Hence it never failed, indeed it could not fail, because it owed no debts.

While there was no physical relation between the imaginative money of the Giro and the ponderable and portable money (coins) of the state of Venice, the government, for the convenience of merchants and others keeping accounts both with the Giro and the depository, created by decree an arbitrary relation between them of 20 per cent, so that it took a hundred ducats in Venetian gold coin to equal in value 80 ducats of account in the Giro. The difference was called *agio*. This agio was afterward raised to 30 per cent and even more, by means of a *sur agio*, or super-agio; the imaginative money being always more valuable than the real.

The so-called "capital" of the Giro in the 13th century has been estimated at about 2,000,000 ducats; in the 16th century (discovery of America and sea-route to India) about 4,000,000; in 1750, 5,000,000; in 1797, 14,000,000. When in that year Napoleon captured the Giro the spoil consisted merely of pen, ink and paper: a set of accounts. Not being able to convert these assets, he left them undisturbed and unaltered.

Credits in the Giro being guaranteed by the state and transferable on its books rendered them very desirable, either as investments or as a ready and reliable means of liquidating commercial transactions. These, together with their inviolability and other advantages, explain their superior value compared with coins.

Throughout its earlier history all moneys deposited with the Giro were treated as loans to the state, credited to the depositor as Giro money at par and handed over to the treasury. But when the commercial demand for bank money raised it to a premium over coins, the depository was established and the earlier practice ceased. The imaginary money of the Giro had become too valuable to be sold for gold or silver coins at par.

The Council of Venice decreed that bank money should not be liable to seizure for debt, nor the subject of mortgage: a decree that assisted to still further raise its value over that of coins.

The three great decrees affecting the Giro: the provision that bills of exchange, unless otherwise stipulated and so expressed, should be payable only at the Giro; that all payments in gross or in wholesale transactions should be effected through the Giro, and the stoppage of interest payments on the capital of the Giro are all ascribed to the year 1423, when Thomas Moncenigo was Doge. There are, however, reasons to believe that these decrees were not coincidental. A later decree of the Council prohibited and severely punished all persons convicted of paying or receiving coins at any other than their denominational value; a provision that still further enhanced the superiority of bank money.

The bank (Giro) was shut one day in each week and four times in a year, each time 20 days, to balance and supervise the books. These intervals constituted a practical moratorium of 132 days in the year. During the intervals when the bank was thus shut, no bill payable in it matured, none could be protested until six days after the opening. This extended the moratorium to 138 days per annum, during the whole of which time the bank was drawing interest on such of its funds as were disposable in market; while it was paying out none. For the history of other ancient banks see BARCELONA, BANK OF; BYZANTIUM, BANK OF; FUGGERS, BANK OF THE; GENOA, BANK OF; MEDICI, BANKS OF THE; TYRE, BANK OF.

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VENICE PRESERVED, or A PLOT DISCOVERED. 'Venice Preserved' is hailed by some critics as "the greatest tragic drama between Shakespeare and Shelley.". This judgment may be accepted if we are careful to exclude plays written during the lifetime of Shakespeare. In its very excellences, and these are of first magnitude, this play reveals how far tragedy had traveled since the Elizabethan era. In all respects of workmanship, constructive power and eloquence, the play is faultless. It lacks only that finer grasp of truth by which the prime masterpiece is distinguished from its offspring of the second generation. The

play falls short by the measure of the qualities that made it one of the most successful plays of a century, by the fact that it is essentially a situation play, and by its sheer theatrical effectiveness.

More than any other work of this time 'Venice Preserved' draws its inspiration from Elizabethan tragedy. Here again are the revenge motives of the tragedy of blood. But these have now turned to conspiracy and intrigue. The conspiracy that in 'Julius Cæsar' occupies a scene or two becomes the theme of a play. The play secured and maintained its popularity largely through the three effective parts which offered scope to the genius of successive generations of actors. Pierre and Jaffeir are closely studied figures of conspirators bound by oath of loyalty. Pierre is simple, trustful, direct. Jaffeir is irresolute, a lover-warrior. Belvidera is one of the favorite women characters of the 18th century stage. She is the loving wife "shining through tears, like April suns in showers" for love of whom the fatal difficulty first grows and who Cleopatra-like hangs upon her soldier's arms and will not let him go. The two men come from Otway's source book, but Belvidera is his own creation. The play is marred by some vulgar comedy of a type dear to Restoration audiences.

The author, Thomas Otway, crowded his 33 years full of tragedy, the written ones hardly more painful than the tragedy of his own life. The story is taken from an historical novel 'Conjuration des Espagnols contre la Venise en 1618,' which existed in an English translation of 1675. It was presented in February 1682, the part of Belvidera being taken by Mrs. Barry, to whom Otway had given his hopeless devotion. As an acting play it was popular down to the freeing of the theatres, the part of Belvidera being assumed by Mrs. Siddons and Miss O'Neill, and the parts of Pierre or Jaffeir by Betterton, Quin, Garrick, Kemble, Macready and Phelps. *Editions:* Noel, R., ed. 'Mermaid Series' (1888); Gollanz, I., ed., 'Temple Dramatists'; McClumpha, C. F., ed., 'Belles Lettres Series' (1908). Consult Gosse, E., 'Seventeenth Century Studies.'

THOMAS H. DICKINSON.

VENIZELOS, vā'nē-zā'lōs, **Eleutherios,** Greek statesman: b. near Canea, Crete, of Greek parentage, 1864. He was educated at his home town, at Smyrna, and the University of Athens, practised law in Crete and was elected deputy for the district of Kedonia in the Cretan assembly in 1888. He first acquired fame in the troubled events that led to the liberation of Crete in the insurrection of 1896–97. He became the leader of his people and president of the new Cretan national assembly. But the advent of Prince George of Greece as high commissioner of Crete was followed by a serious conflict between him and Venizelos. The prince aimed at despotic government, but Venizelos had not overthrown the tyranny of the Turk in order to set up a new despotism from Greece. He resigned his office, donned military uniform and headed the insurrection of 1905 which culminated in the fall of the prince and his retirement to Paris. Under the new commissioner, Zaimis, Venizelos returned to power with increased prestige. His fame spread to Athens and fired new hopes in Greece. In the political confusion of 1909, when the throne trembled and the nation itself seemed on the verge of dissolution, the democracy of Greece appealed to the man who had saved Crete to come and be its savior also. The late King George, overlooking the "outrage" Venizelos had committed on his son the prince in Crete, joined in the appeal. Although a confirmed republican, Venizelos came to Greece, saved the dynasty and the country, carried through a revision of the Constitution and prepared the Balkan League (q.v.) of 1912. A man of unswerving honesty, he used smooth words neither to his king nor the people; he boldly declared that the Crown had usurped too large a place in the function of government. He reformed the army and navy, swept away the oppressive taxation on the poor, set the throne on its feet and gave the country a stable administration. All this he accomplished in two years. After the overthrow of the Turk in the first Balkan War Venizelos strove hard to avert the disaster of the Bulgarian defection from the League. When Bulgaria was crushed and defeated, Venizelos offered magnanimous concessions to soothe Bulgarian sentiments, but King Constantine, who had succeeded his father, intrigued against the minister. From the beginning of the European War Venizelos was convinced that Greece must join the Allies, especially after the entry of Bulgaria, for Greece was bound by treaty to come to the assistance of Serbia. Thwarted by his king and queen, the latter a sister of the Kaiser, and the intrigues of German agents, Venizelos steadily prepared for intervention. Unable to carry his point, he finally broke with the king and set up a provisional revolutionary government at Salonica, ultimately returning in triumph to Athens as head of the government after the abdication of Constantine and the accession of King Alexander. He contributed notably to the success of the Salonica army by the reorganization of the Hellenic forces. Venizelos was the principal Greek representative at the Peace Conference in Paris, at which he advocated the liberation of Greek Asia Minor and the Ægean Islands from Turkish rule, as well as the union of all Greeks into one state.

VENOMOUS ANIMALS. Among the various contrivances for offense and defense found among animals the presence of a poison-apparatus, consisting of a poison gland and an organ for introducing the poison into the body of the prey, is a noteworthy feature. In some of the lower forms of animal life, such as Cœlenterata, peculiar stinging-cells, termed *nematocysts*, are developed in the tissues. Each consists of a sac having a filament coiled up therein. On being touched the thread-cell ruptures and the thread is everted and enters the surface of any animal it touches with a benumbing effect. In centipedes a poison-apparatus is contained within the mouth, one pair of foot-jaws being furnished with a hooked fang which communicates with a poison-gland. Among insects, such as the bees, hornets, etc. (qq.v.), the sting (see OVIPOSITOR) consists of sharp filaments, perforated for the transmission into the wound they make of a poisonous or irritating fluid, secreted by a special gland. In the scorpions (q.v.) the poison-gland is situated in the last segment of the jointed tail, the

fang being formed by the modified *telson*. Among higher animals the serpents (q.v.) constitute the chief group in which a venomous apparatus is present. In these animals certain modified teeth of the upper jaw form grooved fangs, which communicate with the poison-glands, formed by modifications of the salivary glands. (See RATTLESNAKES). The venom of serpents appears to act by altering the constitution of the blood and by action on the blood-corpuscles preventing the due purification of the blood. It may be remarked that in all cases the venomous matter must be introduced *directly* into the circulation to produce its effects. A person may swallow the poison of a snake without experiencing any evil effects.

VENTADOUR, vän'tą'door, **Bernart de,** one of the most famous of the early Provençal writers. He was born toward the beginning of the 12th century at Ventadour in Limousin. He early developed a talent for the poetry of the troubadours and as a traveling troubadour he is known to have visited most if not all of the Provençal countries, at the courts of all of which his talent as a singer made him welcome. It was, however, at the court of Eleanor of Aquitaine that he was the greatest; and it is believed that when the latter princess married Henry II of England the poet went with her to the English court. Ventadour had a strong and lasting influence upon Provençal literature and his work is still read in the Provençal countries. (See PROVENÇAL LITERATURE). Consult Raynouard and Mahn for collections of his songs; Bischoff, 'Biographie des Troubadours Bernhard von Ventadour' (Berlin 1873); Carducci, 'Un poeta d'amore del secolo XII' (in 'Nuova Antologia').

VENTILATION. See HEATING AND VENTILATION.

VENTILATION, Medical Aspects of. The air of rooms is frequently rendered more or less injurious by the accumulation of dust and other suspended matters, or by an undue proportion of one or more of the normal constituents of the air or by the addition to it of poisonous gases. Dust consists in varying proportions of spores, seeds, cellular tissue, hair, epidermal cells and other animal substances, of flint-like particles and of microscopic organisms, some of which may be disease germs. The gases which most often make the air impure are carbon dioxide, carbon monoxide, illuminating gas, hydrogen sulphide and sewer gas. The organic nitrogenous matter thrown off from the lungs, the emanations from the skin and other impurities, mingled with carbon dioxide and watery vapor, give to the atmosphere of a room that odor which is so disagreeable to those who enter from the outer air. They are the cause of that close, oppressive sensation perceived so often in the unventilated rooms of tenements. Of the normal constituents of the air, oxygen is the vivifying principle. To diminish its normal amount in a room by the combustion in stoves and lights and by the expired air mingled with organic matters is to vitiate the atmosphere. To supply oxygen and to remove these impurities is one of the objects of ventilation. An increase in the amount of carbon dioxide results from the combustion of any substance containing carbon, from the decay and putrefaction of any animal or vegetable substance, from fermentation and from the respiration of animals. But the amount of carbon dioxide in a room is an index of the amount of organic matter and the amount of this gas present is a guide to the respiratory impurity of the air.

The investigation of the air as to organic impurities is prolonged and tedious, but an increase in the amount of carbon dioxide which proportionately diminishes the normal amount of oxygen is readily ascertained. Those who do not fully appreciate the conditions exhibit a tendency in cold weather to keep windows and doors closed, to put on weather-strips and to overheat apartments. Fresh air is kept out and the indoor air is fouled. Sore throats, consumption and various lung troubles result, while disease germs are afforded every opportunity to develop. Many of the dangers arising from impure air may be obviated by suitable ventilation, by chemicals, heat and steam. Impure air undermines the health and changes the character of the blood. Suitable ventilation is the free admixture of outdoor air with that of apartments, but so modified as to temperature and velocity of current as to prevent cold drafts, which are injurious, especially to the feeble, the very young and the aged, for they lower the temperature of the body and produce internal congestions.

Ventilation should take place by night as well as by day. In fact, night air is usually purer than day air and contains less carbon dioxide. Insufficient fresh air at night in the bedroom is often the cause of sleeplessness. The airing of one room by introducing the confined air from another is not suitable ventilation; neither is it proper ventilation to draw the air from a cellar, or to rely entirely upon the air-chamber of a furnace. If possible the air should be drawn from above the street-level, in order that it shall be comparatively free from dust and other suspended matters. The air of a room should not only be free from any disagreeable odor, but also from a sense of closeness. To maintain the air sufficiently pure for respiratory purposes, 90 cubic meters of fresh air per hour should be supplied to each individual and each individual in health should have not less than 30 cubic meters of air-space. For the sick in hospitals even double this amount of air-space is none too much. Outdoor air may be brought into rooms through one or more layers of fine wire gauze, woolen, cotton or linen cloth fitted in frames into the windows or arranged as screens before the open windows; or it may enter through revolving metal wheels inserted into window-panes; or through small diagonal openings in the window-sashes; or between the two sashes of a window, this being made possible by placing under the lower sash a board, occupying its whole width, and from three to six or more inches high; or, finally, over a cloth fastened to the lower parts of the window-frame, the lower sash of the window being raised.

VENTNOR, vĕnt'nôr, England, a pleasure-resort on the southeast coast of the Isle of Wight, eight miles southeast of Newport. It is beautifully situated on a terraced site and has an excellent climate. Besides churches and chapels it has a Benedictine convent school; a literary and scientific institution, with library

and museum; Albert Hall; convalescent homes and the usual conveniences of a seaside holiday resort, hotels, boarding-houses, esplanades, pier, park, etc. The permanent population of the urban district is about 6,500.

VENTRILOQUISM, the art of speaking in such a way as to cause a hearer to believe that the sound comes not from the person speaking but from a different source. The name originated from the erroneous supposition that the sounds uttered were formed in the abdomen, whereas it is practice alone that produces the illusion to a high degree of perfection. The sounds are formed by the same organs as the emissions of sound commonly — the larynx, the palate, the tongue, the lips, etc. The art of the ventriloquist consists merely in this: After drawing a long breath he breathes it out slowly and gradually while he talks, ingeniously modifying the sound of the voice by the muscles of the larynx and the palate; besides this he moves his lips as minutely as possible and by various contrivances diverts the attention of his auditors. This art was known to many of the ancients, and appears to antedate recorded history. It is practised by wandering magicians in many semi-civilized countries and is a common form of entertainment on the vaudeville stage.

VENTURA, vän-too'rä, **G. D. Gioachino,** jo-a-kē'nō, Italian theologian: b. Palermo, 8 Dec. 1792; d. Versailles, 3 Aug. 1861. At 15 he entered the Jesuit college of his native city and subsequently was received as a novice by the Theatines. Having been admitted to holy orders as general secretary of the order, he contributed largely to its restoration, and published 'La Causa dei Regolari al Tribunale del Buon Senso.' He then was made censor of the press and member of the royal council of public instruction for the kingdom of Naples. He became distinguished for his funeral orations, one of which, on Pius VII, gained him the name of the "Italian Bossuet." In 1824 he was appointed general of the order of the Theatines, fixed his residence at Rome and was presented to the chair of ecclesiastical law in the University of Rome. In 1828 he published his work 'De Methodo Philosophandi,' in defense of the Christian or scholastic philosophy. This was bitterly attacked by his old friend, the Abbé Lamennais; and, wearied of controversies, Ventura quitted Rome and spent 10 years in retirement. During this period he preached his finest sermons, including the funeral sermon of O'Connell, the liberal opinions advanced in which gave him great influence with the people. In 1848 the government of Sicily made him Minister Plenipotentiary to the court of Rome. On 4 May he left Rome and retired under the protection of the French to Civita Vecchia and afterward to Montpellier, in France. Here he wrote 'Letters to a Protestant Minister' (1849). Settling in Paris, he drew crowds to the churches of the Madeleine and Saint Louis d'Antin by the eloquence and originality of his discourses. At Paris also he published 'Histoire de Virginie Bruni' (1850); 'Les Femmes de l'Evangile' (1853); 'La Raison Philosophique et la Raison Catholique' (1852); 'Essai sur l'Origine des Idées' (1853); 'La Femme Catholique' (1854); 'L'école des Miracles, ou les Œuvres de la Puissance et de la Grandeur de Jésus Christ' (1854–55) and 'Le Pouvoir Chrétien' (1857).

VENTURA, vĕn-too-rą, Cal., city, county-seat of Ventura County, on the Pacific Ocean and on the Southern Pacific Railroad, about 70 miles west by north of Los Angeles and 400 miles south of San Francisco. The name of the post office is Ventura. The legal name of the city is San Buenaventura, from the name of the old Spanish mission established by the Franciscan Fathers in 1782. This mission was next to the last to be built by Father Junipero Serra and is still in use. The city is the centre of an excellent county and State highway system. It has rail and ocean transportation facilities and is a shipping point for the many agricultural industries of the surrounding section. The principal products are beans, sugar beets, oranges, lemons, apricots and English walnuts. In the county are rich oil fields. The city has light, gas and water plants, a fine courthouse, city and county libraries, good hotels and an up-to-date bathhouse with beach attractions. Schools and church facilities are excellent. Pop. 4,000.

VENUE, *in law,* the place, county or district where an action is to be tried and whence juries are to be summoned for trial of causes. In local actions, as of trespass and ejectment, the venue is to be from the neighborhood of the place where the lands in question lie; and in all real actions in the United States the venue must be laid in the county where the property is for which the action is brought. Where a defendant verily believes that he cannot receive a fair trial in the county where action is brought against him he is entitled to ask for a change of venue to a locality where there are no prejudices against him or his case. The convenience of witnesses who may be called is another reason for granting a change of venue. See JURISDICTION.

VENUS, the Roman name of the goddess of love, identified by the Romans with the Greek goddess Aphrodite. In the 'Iliad' she is described as the daughter of Zeus and Diōnē, but Hesiod represents her as the offspring of Uranus, born among the foam of the sea. She surpassed all other goddesses in beauty and hence received the apple which was to be awarded to the most beautiful by Paris. She was the wife of Hephæstos (Vulcan), but would scarcely be considered a faithful consort, as she bestowed her love on the gods Arēs, Dionysos, Hermes and Poseidon, and the mortals Anchises and Adonis. Among her children were Eros (Cupid), Anteros, Hymen and Hermaphroditus. She had the power of granting beauty and irresistible charms to her votaries. Among plants the myrtle, rose, poppy, apple and other fruits were sacred to her, and among animals the dove, sparrow, swan, swallow, ram, hare and tortoise. The chief places of her worship in Greece were the islands of Cyprus and Cythera. Before she was identified with the Greek Aphrodite, Venus, the Roman goddess, was one of the less prominent divinities in the religion of the Romans, yet her worship seems to have been established in Rome at an early period. Here several temples were erected to her at different times and under different names. In the best days of art this god-

dess was sometimes represented draped, at other times nude. The most celebrated ancient statue of Aphrodite was that in Cnidus by Praxiteles; there are copies of it in the Vatican and at Munich. Consult Gayley's 'Classic Myths in English Literature' (Boston 1911).

VENUS, *in astronomy,* the second planet in order of distance from the sun. The mean distance of Venus from the sun is 67,200,000 miles; its orbit has an eccentricity of .00686 and the plane of its orbit is inclined to the plane of the ecliptic at an angle of 3° 23′ 35″. It completes one revolution about the sun in 224.7 days and as its orbit lies wholly within the orbit of the earth the planet shows phases as seen by us, being seen full when it is at its greatest distance beyond the sun, half full when farthest to the left or right of that body and new when between the sun and the earth. During its motion around its orbit its distance from us varies enormously and hence also does its apparent size. When at its greatest distance, of 161,200,000 miles, its apparent diameter is but 9″.5, while at its nearest approach it is but 24,500,000 miles away and its apparent diameter then is 65″.2. It is only when near the former position that the illuminated hemisphere is almost entirely turned toward the earth; as the planet draws nearer, this hemisphere is steadily replaced by the dark one, so that near the time of closest approach we see the planet only as an exceedingly narrow crescent. This is why, notwithstanding the fact that Venus draws nearer the earth than do any of the other planets, we nevertheless view it under much less favorable conditions than occur when an outer planet reaches its position of closest approach.

The planet Venus more closely resembles the earth than does any other body in our solar system. Its diameter is but 7,700 miles, its surface gravity is 0.8 of that on the earth and it is surrounded by an atmosphere of considerable density. This last is made evident by the fact that as Venus approaches the crescent phase the horns extend far beyond the 180° points; when very near new, a thin, bright ring due to its atmosphere has, in fact, several times been seen completely encircling the darkened ball. It is another evidence of an atmosphere that the brilliance of the disc is greatest at the limb and falls off very rapidly as the terminator is approached; twilight effects, also, have been observed along the terminator for more than a century. As a result of the presence of this atmosphere, our knowledge of the surface markings of Venus is practically nothing. Many drawings showing shaded areas, white areas or white spots have been made from a century ago until now, but whether a part of these markings may be continental or oceanic areas dimly seen through the overlying atmosphere, or whether all are merely transient cloud forms we do not know. This uncertainty also prevents any certain answer being given to the important and interesting question of the time of rotation of the planet. The earlier observers, and many of the modern ones, believed that this was between 23 and 24 hours; the observations of others led to a rotation period equal in length to the planet's year, thus indicating that Venus keeps always the same face turned toward the sun. A different line of attack is furnished by the utilization of the spectroscope to determine the velocities of different portions of the planet's disc toward or away from the earth. (See SPECTROSCOPY). But the observations are very difficult and thus far the results from different observatories are contradictory.

In the course of its motion about its orbit Venus sometimes passes between the earth and the sun and is seen crossing the bright disc of the latter as a round, black spot surrounded by a thin, atmospheric ring. These occurrences are known as Transits of Venus; when the transit is central, the passage occupies about eight hours. The earliest observed transit occurred in 1639; four have since occurred, in the years 1761, 1769, 1874 and 1882. Extensive observations were made upon the last two for the purpose of determining the solar parallax but the processes then employed have since been superseded by more accurate methods. (See PARALLAX). The next two transits of Venus will occur as follows:

2004, June 8, 9 A.M., Greenwich M. T. Duration 6 hours 2 minutes.

2012, June 6, 1 A.M., Greenwich M. T. Duration 6 hours 20 minutes.

ERIC DOOLITTLE,
Director, Flower Astronomical Observatory, University of Pennsylvania.

VENUS OF THE CAPITOL, a famous ancient Greek statue preserved in the Capitoline Museum, Rome. The goddess is represented undraped, with her arms in the position of the still more noted Venus of Melos, her drapery being cast upon a vase beside her.

VENUS FLOWER-BASKET, one of the glass-sponges (q.v.).

VENUS FLY-TRAP, a plant. See DIONÆA MUSCIPULA.

VENUS GENETRIX, jĕn'ĕ-trĭks, a statue of Venus set up in a splendid temple by Julius Cæsar in the forum laid out by him just after his victorious return from his campaign against Pharnaces (46 B.C.). He took the title from the first words of the proœmium with which the poem of Lucretius 'De Natura Rerum,' then only a few years published, opens —"Æneadum Genetrix," "Mother of the Descendants of Æneas." Julius Cæsar traced his descent with that of the whole Julia gens to Iulus, the son of Æneas, the latter being the son of Venus, according to the Trojan cycle, by Anchises. Hence the whole Roman people were called upon to look upon Venus as their divine ancestor. Hadrian added the title "Victrix," victorious, to that of Genetrix, in 134 A.D. and built a double temple to her honor near the Colosseum. The statue which is commonly known as 'Venus Genetrix' is the copy of a Greek original, now in the Louvre, Paris; but the marble statue of the same name in the Vatican is really the only copy extant of the bronze statue by Arcesilaus which stood in the temple built by Cæsar in his forum, the Forum Julium.

VENUS GIRDLE, an oceanic ctenophoran (see CTENOPHORA) remarkable for its shape, which is that of a ribbon, sometimes nearly five feet in length and about two inches in width — a filmy, semi-transparent undulating creature long ago named *Cestus Veneris,* "girdle of

Venus.» This shape is due to thin wing-like expansions in a vertical plane from opposite sides of the body which is in the middle of the «ribbon,» and conforms to the ordinary ctenophoran, especially when young. Two of the ciliated swimming plates are extended along the upper and lower edge of the ribbon, and the creature swims by the aid of them and by an undulatory action. This curious and elegant jellyfish occurs frequently in warm seas, at all distances from land.

VENUS OF THE HERMITAGE, a Parian marble antique statue discovered in Rome in 1859, and now in the Hermitage, at Petrograd. It has been only slightly restored and is a close replica of the Venus of Medici, with a somewhat less conscious pose.

VENUS' LOOKING-GLASS, a very pretty little annual plant, *Specularia speculum,* of the Campanulaceæ, which has long been a favorite in flower-gardens, and is a native of corn-fields in the south of Europe. It has brilliant blue, white, or violet flowers, which fold up in a pentagonal manner toward evening. This name has been extended to the whole genus. The familiar American species is *S. perfoliata,* a more or less pubescent, stiffly erect herb, having crowded orbicular or broadly ovate leaves, crenulate, diminishing in size toward the top, and clasping the stem closely with their cordate bases. The later rotate violet-blue corollas peer out from the upper axils, so that the whole plant looks like a leafy spike of flowers. They frequent dry and sandy fields, are common, and are remarkable for their dimorphic flowers. .The primary and lower flowers are small and cleistogamous, the calyx being longer than the minute corolla of valvate, connivent petals, which apparently never open spontaneously, but are self-fertilized and mature perfect seeds. The fruit is an oblong capsule opening by valves near the middle.

VENUS OF MEDICI, an antique statue which was found at Tivoli in the villa of Hadrian in the 17th century in 11 fragments, and was deposited in the Medici Palace, whence it passed in 1680 to Florence. In 1808 it was carried off to Paris and placed in the Louvre, but in 1815 was again taken to Florence, and now stands there in the Tribune of the Uffizzi. It represents the nude figure of the Greek Goddess Aphrodite, rising from the foam of the sea. There is much beauty and charm in the face and form. It belongs to the decadent period of Greek art during which the repose and somewhat hieratic action of Sculpture had given place to the expression of momentary emotion.

VENUS OF MELOS, a celebrated Greek statue now in the Louvre, Paris. It is so called on account of its discovery in the island of Melos in 1820. Its date is assumed to be between the time of Phidias and that of Praxiteles, or about 400 B.C. The statue represents a majestic woman, undraped to the hips standing with the weight on the right foot and with the head turned slightly to the left. The arms are broken off, and their original position has been much disputed. The statue is also called the Venus of Milo.

VENUSBERG, vā'noos-bĕrg. See TANNHAUSER.

VERA CRUZ, vĕ-ra krooz (Sp., vā'rā krooth), or **VERACRUZ,** Mexico, a state bounded by Tamaulipas on the north, by the Gulf of Mexico on the east, by Oaxaca on the south, and by San Luis Potosi, Hidalgo and Puebla on the west. The area is about 30,000 square miles, and it is mostly a mountainous region, with a narrow border of hot and unhealthy coast below the Sierra Madre range, which occupies its central and western portions and rises to a height of more than 12,000 feet above sea-level. At elevations of more than 3,000 feet, the climate is comparatively healthful and temperate, and the vegetable products in their variety correspond to the various conditions of temperature and humidity. Thus, cereals are grown in the state, as well as sugar-cane, cotton, tobacco, cacao, coffee and vanilla; and stock raising is carried on successfully. The natural pasturage lands in the Huasteca Potosina region are specially fine, and Vera Cruz shares them with Tamaluipas and San Luis Potosi. Mineral products are silver, gold, coal, copper, lead, iron, mercury, asphalt, marble, petroleum, and the precious stones, opals, amethysts, etc. But the importance of the state rests mainly upon its commercial relations with other sections of the republic, with the West Indies and South and Central America, and with the western European nations. The total annual value of imports and exports and of domestic trade is estimated at $100,000,000, many of the articles that Mexico sends to foreign countries or receives from them passing through the open ports mentioned above. A list of the industrial establishments includes iron foundries, cotton, paper, woolen and sawmills, and manufactories of chocolate, wax matches, etc. The capital city is Jalapa (q.v.). Pop. about 1,250,000.

VERA CRUZ, Mexico, the most important port on either coast of the republic of Mexico, on the Bay of Campeche, and the Mexican Railway, about 200 miles from Mexico City. As the spot whereon the Spaniards first set foot on Mexican soil, it possesses exceptional interest. The history of the «Heroic City» dates from the landing of Cortez, on 22 April 1519. It was not until 1615, almost 100 years later, that the title and privileges of «city» were bestowed by Philip III. Here the republic was proclaimed on 22 Dec. 1822, by Santa Ana. The city was bombarded by the United States forces in 1847. It had been assaulted by the French in 1838, and again in 1861. In 1914 United States troops occupied the city for many months to maintain order and protect American lives and property. The expenditure of $25,000,000 by the government in improving the harbor the area of which is 570 acres; the building of four railways — the Mexican, the Interoceanic, the Veracruz and Pacific and the Alvarado, to its doors; the excellence of its steamship service and the recent establishment there of headquarters for its lighthouse service, by the federal government, have made the city a very important element in the commercial and industrial growth of the country. The annual imports and exports exceed $90,000,000 value. At a manufacturing and wholesale point the city is rapidly advancing. It is particularly noted for the manufacture of cigars. Lage quantities of ore, chicle, dye woods and

hides are exported. The principal buildings are the federal custom house; the new headquarters of the lighthouse service; the church of San Francisco; the old churches of San Domingo and San Augustine, now occupied by a firm of wholesale merchants; the Hospicio Zamora; the military hospital; the Hospital of San Sebastian, and several extensive cigar manufactories. The famous fortress of San Juan de Ulua occupies a conspicuous position near the entrance to the harbor. The Alameda and several fine plazas provide breathing places for the public. In one of these is a bronze statue of Don Manuel Gutierrez Zamora. There are military barracks in a remote section. The financial institutions of the city are the Mercantile Bank, with $2,000,000 capital, the Veracruz Banking Company, a branch of the National Bank and an agency of the Bank of London and Mexico. Pop. about 42,000.

VERA CRUZ, Capture of, in the Mexican War. While the battles of Palo Alto, Resaca de la Palma, Monterey and Buena Vista (qq.v.) were being fought, an expedition was being organized by Gen. Winfield Scott (q.v.) to strike inland from the coast and capture Mexico City. Early in March 1847 Scott's 12,000 troops were landed at a point three miles south of Vera Cruz, and on 10 March the investment of the city was begun, the troops under Gen, William J. Worth (q.v.) occupying the sandhills, while to the northward, carrying the line of investment around the city to the shore north of it, were the divisions of Gens. Robert Patterson and David E. Twiggs (qq.v.), Much time was lost in bringing up siege guns, mortars, etc., and therefore Scott was not prepared to begin the bombardment for some time. The doomed city was surrounded on the land side by an almost unbroken line of bastions and redans mounting 100 guns. In the Gulf of Mexico, on a reef about a mile off shore, was the stone castle of San Juan d'Ulloa (or Ulúa) built in 1582 at enormous cost, garrisoned by 1,000 men and defended by 128 guns. On 18 March, when the city refused to surrender, Scott permitted the non-combatants to retire, and four days later began the bombardment. Aided by the fleet Scott hurled shot and shell into the city for the next four days and nights, 3,000 90-pound shells and as many shot, chiefly 32-pounders, being thrown from the American guns. The provisions in the city soon began to run low and on the 24th the French, Spanish and British consuls sent a joint note to Scott requesting him to allow the foreigners, both male and female, and the Mexican women and children to leave the city but Scott refused, since sufficient warning had been given before the bombardment began. Firing was then resumed, but the next day, the 25th, a flag of truce appeared, and after four days of negotiations the city was surrendered, with the castle of Ulloa. During the siege 400 of the garrison were killed and 600 wounded and between 400 and 600 of the inhabitants had perished. Appointing Worth temporary governor, Scott resumed his march, subsequently fighting the battles of Cerro Gordo, Contreras, Churubusco, Molino del Rey and Chapultepec (qq.v), and finally entering Mexico City in triumph. Consult Cooper, J. F., 'Naval History' (Vol. III, pp. 83–90); Jay, William, 'Mexican War'; Ladd, H. O., 'The War with Mexico' (pp. 207–216); Maclay, E. S., 'History of the Navy' (Vol. II, pp. 178–185); Maury, Dabney H., 'Recollections of a Virginian in the Mexican, Indian and Civil Wars' (pp. 31–35); Schouler, James, 'United States' (Vol. V, pp. 38–47); Scott's 'Memoirs' (Vol. II, pp. 400–428); Wright, M. J., 'Life of Scott' (pp. 162–172); Wiley and Rines, 'The United States' (Vol. VII, pp. 229–231).

VERAGUA, vā-rā'gwä, **Duke of,** dukedom created for the lineal descendants of Christopher Columbus: first borne by his grandson, Luis Columbus, in 1536. It was next inherited by Diego Columbus, great-grandson of the discoverer, upon whose death without issue in 1578 the direct male line of Columbus became extinct. The title was 30 years later settled upon the descendants of Isabel, sister of Luis, the first duke, and upon the extinction of that line in 1733, passed to the descendants of Francesca, sister of Diego, the second duke. The 13th incumbent in descent from Christopher Columbus, b. Madrid, Spain, 1837, was, in 1893, the guest of the United States government at the opening ceremonies of the Columbian Exposition, and was received with high honors by the American people.

VERATRINE, or **CEVADINE,** $C_{32}H_{49}O_9N$, a vegetable alkaloid found in certain species of *Veratrum* or *Hellebore,* and along with sabadilline and veratridine, in sabadilla seeds. A colorless crystalline powder, very acrid and highly poisonous. It is almost insoluble in water or alkalies, slightly so in ether, very soluble in alcohol. It is prepared by extracting the finely pulverized seeds with alcohol containing 1 per cent of tartaric acid. This extract is first evaporated to a syrup and then diluted with water to precipitate the resin. To the remaining clear solution soda is added in slight excess, and this mixture is then shaken with ether. The ether solution is separated and mixed with a light petroleum oil and filtered. The filtrate being allowed to evaporate spontaneously, crystals of cevadine separate; these are purified by recrystallization from their solution in alcohol. It is used somewhat in medicine as a liniment or ointment for external application in cases of acute neuralgia. A very small amount getting into the nostrils causes violent sneezing. In homœopathic practice it is administered internally in high dilution, in remittent fevers.

VERATRUM (Lat. *hellebore*), a genus of liliaceous plants, commonly known as hellebore (q.v.).

VERAZZANO, vā-rät-sä'nō, or **VERRAZANO, Giovanni da,** Italian navigator and explorer in the New World: b. near Florence, about 1480; d. Pico, New Castile, Spain, November 1527. He is described as having traded with the Orient, and about 1505 entered the maritime service of France. By that government he was employed as a privateer, or pirate, for the capture of Spanish prizes. In 1523 he took the treasure-ship sent by Cortes to Charles V. On 17 Jan. 1524 he sailed from the Madeiras on an exploratory voyage to North America. He discovered land near Cape Fear, discovered also a bay — either New York or Narrangansett — went northeastward to lat. 50° N. and then returned to France. He was

later captured and executed by the Spaniards. The only known evidence for his discoveries is a letter from him to Francis I, published in Italian by Ramusio in 1556, there being apparently no extant French original. The genuineness of the letter has been attacked; but is skilfully defended in Brevoort's 'Verrazano the Navigator' (1874). Consult also Murphy, 'The Voyage of Verrazano' (1875); Da Costa, 'Verrazano the Explorer' (1880).

VERBECK, Guido Fridolin, a citizen of no country but honored in Holland, America and Japan; missionary, educator and statesman: b. at Zeist, in the province of Utrecht, 1 Feb. 1830; d. Tokio, 10 March 1898. He was educated in the languages and humanities in the Moravian Academy at Zeist, often hearing the returned missionaries, especially Gutzlaff of China. He prepared for the profession of engineer in the School of Technology at Delft. Coming to America he was engaged as mechanical engineer in Wisconsin and Arkansas (1852–56), and entering the Theological Seminary in Auburn, N. Y., graduated in 1859, and as the "Americanized Dutchman" needed for the mission of the Reformed Dutch Church in America, in Japan, went out and settled at Nagasaki. The Japanese government called him to educational work in 1863, and thenceforward for nearly 20 years he was in its service, training up many young men who afterward became the rulers of the nation. He organized the national system of education, superintending the foreign teachers and instructors of the Imperial University in Tokio, served as secretary to the Genro-in, or Senate, translating the constitutions of European countries, the code Napoleon, Bluntschi's 'Stattsrecht' and various bodies of laws and regulations. He was the originator of the idea of an imperial embassy around the world in 1872, and over one-half of its personnel were his former pupils. He was one of the translators of the Old Testament into Japanese and a member of the New Testament revision committee. Unable to claim citizenship in Holland or the United States, the Japanese government awarded him the unique distinction of permanent residence and protection. He wrote the 'History of Protestant Missions in Japan' (1872). Consult 'Verbeck of Japan: A Citizen of No Country' (New York 1900).

VERBENA, a name anciently applied to any herb used in religious rites, but now restricted to a genus of plants typical of the family *Verbenaceæ*. The species, of which about 110 have been described, are mostly annual and perennial herbs or shrubs distributed mainly in the American tropics but extending northward in the United States, where some weedy species are common in the gardens and other tilled land. They are characterized by erect or trailing stems which usually bear opposite leaves and terminal spikes, sometimes panicles or corymbs of often showy flowers, for which some of the species have become widely popular as ornamental garden plants. The European verbena or vervain (*V. officinalis*) is an annual herb with slender paniculate spikes of small purplish flowers. It was formerly in high repute in medicine and was probably introduced into America for such purposes and cultivated by early settlers. It has become naturalized in some places along roadsides and waste places, but is not a troublesome weed. The showy garden verbenas are derived mainly if not wholly from South American species, the first of which were introduced into cultivation between 1826 and 1838. *V. chamædryfolia,* a brilliant scarlet, *V. phlogiflora,* a rose or purple and *V. incisa,* another rose or purple, were the first introduced and *V. teucrioides,* a white-flowered species, appeared in gardens in 1838. These four species are the most important, since they are the chief progenitors of the garden verbenas, though two other species (*V. canadensis* and *V. tenera*) have apparently been employed by florists for hybridizing. Since the progeny of these hybrids rarely produce germinable seed, the species are believed to have had a very small influence upon the present garden forms. A Brazilian species (*V. venosa*) is a tuberous-rooted plant whose panicled, lilac, bluish-purple or sky-blue flowers are fragrant at night. Its tubers are stored over winter in cold climates. Verbenas thrive best in rather rich, deep, light, well-drained loam. If well exposed to the sun for at least part of the day and if the stems are pegged down so as to take root they should give a constant succession of bloom throughout the summer and until frost. Consult Bailey, 'Standard Cyclopedia of Horticulture' (New York 1916).

VERBOECKHOVEN, vĕr-book'hō-vĕn, **Eugen Joseph,** Dutch painter: b. Warneton, West Flanders, 9 June 1798; d. Brussels, 19 Jan. 1881. His father was a sculptor and taught him to emboss and to draw. In 1821 he produced his first large canvas, 'The Cattle Market at Ghent,' and the reputation he gained by this success enabled him to settle at Brussels, open a studio, and from 1847 put forth one after the other a series of animal pictures, especially landscapes with sheep, which received much applause from their careful, truthful drawing and the refinement and smoothness of their execution. Of his paintings seven are in Leipzig and three in the Berlin National Gallery. There are two fine examples of this painter's work in the New York Metropolitan Museum.

VERD ANTIQUE, vẽrd ăn-tēk', literally, ancient green, applied to ornamental stone, consisting mainly of serpentine and usually mottled with slight traces of dolomite, iron, calcite, chromium, etc. Very beautiful pedestals and columns are made from it. The stone is still common in Italy. The name is extended to old bronzes, verdigrised by exposure.

VERDANTI. See NORNS.

VERDE, Cape. See CAPE VERDE.

VERDI, vĕr'dē **(Fortunino) Giuseppe (Francesco),** Italian composer: b. Le Roncole, near Busseto, Parma, 9 Oct. 1813; d. Milan, 27 Jan. 1901. His earlier musical education he received from a local musician of Le Roncole and Giovanni Provesi, maestro di cuppella of the cathedral of Busseto and director of the Società Filarmonica, there. He wrote for this orchestra several marches, a symphony and other instrumental pieces now treasured in manuscript in the Busseto library. In 1831 he went to Milan to continue his studies, but upon his application for a scholarship at the Conservatorio was rejected "for want of musical ability," according to the report of the

director. He then studied composition and instrumentation with Vincenzo Lavigna. Upon his return to Busseto, he became conductor of the Filarmonica and organist of San Bortolommeo. From 1838 he was again at Milan, where his first opera, 'Oberto, Conte di San Bonifacio,' was presented with considerable success at La Scala (1839); 'Un Giorno di Regno' (1840), called "un bazar de reminiscences," was an utter failure, but 'Nabuccodonosor' (1842), to a Biblical libretto by Solera, was received so well as at once to establish his reputation. 'I Lombardi' (1843) and 'Ernani' (1843), with libretto from Hugo's 'Hernani,' were even more pronouncedly successful. The Austrian government in both cases made objections to the revolutionary ideas contained in the works. The political demonstrations of the time were no doubt of aid to the composer, and, in fact, the name Verdi was employed by the patriot party as an acrostic for Vittorio Emanuele Re D'Italia. 'Ernani' was the first of Verdi's works to be produced in England. He was now kept busy supplying impresarios with operas. Most of these were inferior to his earlier successes. Perhaps the worst was 'I Masnadieri,' which Verdi traveled to London to conduct (1847), but could not redeem. Yet with 'Rigoletto' (1851) he entered his most brilliant period. This, with 'Il Trovatore' (1852) and 'La Traviata' (1853), are classed as marking his second manner. They reveal a great advance over 'Ernani' in the treatment of both voice and orchestra. Their success in and beyond Italy was very great. They confirmed Verdi's reputation and they have remained incorporated in the general repertoire of Italian opera. Then followed another series of semi-failures. 'Les Vêpres Siciliennes' (1855), written for the Paris Opera, to be produced during the Universal Exhibition, had, indeed, a somewhat temporary success, and 'Un Ballo in Maschera' (1859) has been at intervals revived. Orsini having recently (13 Jan. 1858) made an attempt on the life of Napoleon, the scene of the latter was changed from Sweden to Boston, Mass., and one Riccardo, Earl of Warwick and colonial governor, was assassinated instead of Gustavus III. Verdi was now working out a new method of expression, liberated from the traditional utterance of the Italian school. With 'Aïda,' on an Egyptian subject, written at the request of Ismail Pasha and presented at Cairo in 1871, he first declared his third manner, revealing to a considerable degree Wagnerian influence, without, however, surrendering the leading features of Italian music. The orchestral resources were greatly increased but the vocal score was still the major part of his scheme. A 'Requiem Mass,' his only non-operatic work of considerable importance, written in 1874 in commemoration of the death of Manzoni, applied this new manner to sacred music. It was the centre of much discussion, being attacked by von Bülow and defended by Brahms. A revised version of 'Simone Boccanegra,' a work which had failed in 1857, was presented with much success at Milan in 1881 and in 1887 'Otello,' with a libretto by Boito, who had largely rewritten that of 'Simone Boccanegra.' Here and in 'Falstaff' (1893), a comic opera, with a libretto also by Boito, there is an increase in dramatic characterization. In 1898 Verdi wrote four sacred works, a 'Te Deum,' a 'Stabat Mater,' an 'Ave Maria' and 'Laudi alla Virgine' (words from Dante). Besides these and the Manzoni 'Requiem,' he wrote for the most part little save operas and a string quartet (1873). A chronological list of his operas is as follows: 'Oberto' (1839); 'Un Giorno di Regno' (1840); 'Nabuccodonosor' (1842); 'I Lombardi' (1843); 'Ernani' (1844); 'I Due Foscari' (1844); 'Giovanna d'Arco' (1845); 'Alzira' (1845); 'Attila' (1846); 'Macbeth' (1847); 'I Masnadieri' (1847); 'Il Corsaro' (1848); 'La Battaglia di Legnano' (1849); 'Luisa Miller' (1849); 'Stiffelio' (1850); 'Rigoletto' (1851); 'Il Trovatore' (1853); 'La Traviata' (1853); 'Les Vêpres Siciliennes' (1855); 'Simone Boccanegra' (1857; rev. 1881); 'Aroldo' (revision of 'Stiffelio,' 1857); 'Un Ballo in Maschera' (1859); 'La Forza del Destino' (1862); 'Don Carlos' (1867); 'Aïda' (1871); 'Otello' (1887); 'Falstaff' (1893); 'Quattro pezzi sacri' (1898). In his work Verdi was greatly aided by his wife, the famous prima donna, Giuseppina Strepponi, whom he married in 1849, after she had made a successful appearance in several of his operas.

Bibliography.—Bellaigne, C., 'Verdi' (Paris 1911); Crowest, F., 'Verdi: Man and Musician' (New York 1897); Garibald, F., 'Giuseppe Verdi nella vita y nella arte' (Florence 1904); Pongin, 'Verdi, an Anecdotic History of his life and works' (1887); Perinello, C., 'Giuseppe Verdi' (Berlin 1899); Roncaglia, G., Giuseppe Verdi' (Naples 1914); Sofferdini, G., 'Le Opere di Verdi' (Milan 1901); Visetti, A., 'Verdi' (New York 1905).

VERDICT, *in law,* the finding of a jury in a civil or criminal case legally submitted to them and later recorded. A verdict is general when the jurors render a complete decision upon the facts as established by the evidence and properly apply the law thereto as presented by the charge of the court. A verdict is special when the jury merely find the facts in detail, leaving the court to apply the law. The jury may bring in a special verdict in criminal cases, but they are not compelled to do so in any case. A verdict which is illegal may be set aside in civil proceedings, but in criminal cases a verdict of acquittal is conclusive. A verdict must be unanimous or it is void. At present the restrictions surrounding a jury while they are deliberating on a verdict are very much less severe than formerly.

In criminal cases a prisoner has the right to be present when the verdict is rendered and has the further right to "poll" the jury; in other words, to call each juryman by name and ask him if the verdict found is his verdict.

In case a verdict may not be found until after adjournment of court for the day, the judge may direct the jury to bring in a sealed verdict, which is delivered to an officer of the court and held until court reconvenes. By the weight of authority a prisoner charged with felony cannot waive the right to the verdict of a jury. The verdict is usually announced by the foreman of a jury in open court. In Scotland the verdict of "not proven" is allowable in criminal cases. This acts as a bar to a second trial on the same charge, but does not exonerate the accused.

VERDIGRIS, a basic acetate of copper that is prepared by exposing copper plates to the action of dilute acetic acid or weak vinegar. It is a blue-green amorphous powder, is very poisonous and is used as a pigment, as a mordant and to some slight extent in medicine. The green rust common on copper that has been long exposed to the atmosphere also bears the name. As a pigment it is useful, mixed with white lead and as an ingredient in copper paints. As a poison it irritates, the most familiar antidote being raw white of egg and warm milk.

VERDIN, or GOLDTIT, a small yellow bird (*Auriparus flaviceps*) of southern California and Mexico, which is one of the most attractive in habits and voice of the birds of that region. It is allied to the titmice.

VERDUN, vĕr-dŭn, France, a fortified town in the department of the Meuse, in a valley on the river of that name, 150 miles northeast of Paris. It has a citadel, the work of Vauban, and is defended by 11 detached forts of modern construction which extend to Toul. Probably no city in Europe is more completely fortified. The ring of forts has a circumference of over 30 miles, with a diameter of 10 miles. There are 16 main forts and 21 smaller batteries in the circle. The arrangement presents a double front to the northeast and when the Germans invaded the first line they were subject to a cross fire from adjoining heights. The most important forts are Hardimont, Vaux, Lanfee, Mardi Gras, Eix, Moulænville, Manezel and Chatillon. These overlook the Valley of the Meuse and have proved as impregnable as modern ingenuity could devise. The principal buildings are the cathedral, which dates from the 11th and 12th centuries, the bishop's palace, and the hôtel de ville. The liqueurs and confectionery of Verdun are famous. The town was captured by the Germans (after a spirited defense) on 9 Nov. 1871. In the great war some of the heaviest fighting and most severe artillery fire the world has ever seen occurred around Verdun, which was long the farthest outpost retained by the French on the northeast front. It was the stronghold of the Allies' right flank, and the German hordes sacrificed scores of thousands of men in repeated assaults in the endeavor to break through, in which they were unsuccessful. See WAR, EUROPEAN.

VERE, Sir Aubrey Hunt. See DE VERE, SIR AUBREY HUNT.

VERE, Aubrey Thomas. See DE VERE, AUBREY THOMAS.

VERE, Edward de, 17TH EARL OF OXFORD, English wit and poet: b. England, 2 April 1550; d. Newington, Middlesex, 24 June 1604. He was educated at Cambridge, and at 12 succeeded to the earldom with its hereditary dignities, including that of lord great chamberlain of England. He became prominent at the court of Elizabeth when still a boy, took his seat in the House of Lords in 1571, and was subsequently a noted figure in court circles. His wit and poetical gifts made him a favorite with Elizabeth, who showered him with attentions; he was famous for his wild extravagance which eventually dissipated his patrimony; and as his years increased he became more than ever eccentric, while his temper, never controlled, acquired a violence which endangered even his favor with the queen. As lord high chamberlain he presided at the trial of Mary, Queen of Scots, in 1586, and at that of the Earl of Arundel in 1589. He was the author of several popular comedies which have been lost, and his poetry displays much lyric beauty. Of the latter some 23 pieces have been proved as his work, though most of it has perished with his comedies. His extant verse was collected and printed by Grosart in 'Miscellanies of the Fuller Worthies Library' (1872).

VERE, Sir Francis, English soldier, grandson of the 15th Earl of Oxford: b. Crepping Hall, Essex, 1560; d. London, 28 Aug. 1609. He entered the army in early youth, served under the Earl of Leicester in the Netherlands in 1585, and in 1588 his conduct at the defense of Bergen-op-Zoom won for him the honor of knighthood. He prepared the way for the capture of Zutphen in 1591, was engaged in the taking of Nimeguen in that year, and in 1592 relieved Prince Maurice at Koevorden. He remained in the Netherlands until 1595, and in 1596 he led the expedition against Cadiz. He was again ordered to Holland in 1597, engaged with Prince Maurice at Tumhout, and in 1598 was appointed governor of Brill and general of the forces in the Netherlands. At the battle of Niewport in 1600 he performed service which turned the tide of battle in favor of Maurice, but was severely wounded and compelled to retire from the field. In 1601–02 he defended Ostend with signal success though against great odds, and in 1606 returned to England, where he was appointed governor of Portsmouth and of the island of Portsea.

VERENDRYE NATIONAL MONUMENT. A government reservation just south of Sanish on the Missouri River in Mountrail county, west central North Dakota. Its area is about one square mile and it includes Crowhigh Mountain, a prominent butte from which observations were made by Verendrye, the French explorer of the Northwest and the first white man known to have entered what is now North Dakota.

VERESTCHAGIN, vĕ-rĕsh-chā'gĕn, **Vasili,** Russian painter: b. province of Novgorod, 25 Oct. 1842; d. on board the battleship *Petropavlosk,* 13 April 1904. He was educated at the naval school in Saint Petersburg, but devoting himself to painting, he entered the Saint Petersburg Academy. In 1861 he traveled in Germany, France and Spain, and in 1864 he entered the École des Beaux Arts at Paris, where Gérôme was his master. He joined the Caucasian expedition under General Kaufmann in 1867, and in 1869 went to Siberia. In 1874 he went to India with the Prince of Wales, and afterward settled in Paris. He took part in the Russo-Turkish War, and was wounded at Plevna. Subsequently he visited all the chief cities of Europe, as well as the United States, exhibiting his pictures. They are of immense size, extremely realistic, and treat chiefly of the horrors of war. Among his war pictures are 'An Unexpected Attack'; 'Before the Victory'; 'After Defeat'; 'Assault on Plevna'; 'After the Assault'; 'Apotheosis of War'; 'Wounded Returning'; 'Our Prisoners'; 'All Quiet at Shipka'; 'The Route to Plevna'; 'The Retreat from Moscow'; 'The Forgotten Soldier';

and, his latest work, a fanciful picture of the battle of San Juan Hill in the Spanish-American War with Roosevelt as the hero. He also took up religious subjects, and his 'Family of Jesus' and 'Resurrection' attracted some attention. He wrote reminiscences, translated into English, such as 'Verestchagin, Painter, Soldier, Traveler' (1888); 'Napoleon I in Russia' (1899), etc. On the opening of the Russo-Japanese War he accompanied the Russian forces and on the sinking of the battleship *Petropavlosk* went down with the ship. Verestchagin was much more than a realist; he was in essentials a poet of tragedy. By his great war pictures he brought home to national consciences the intense significance of the pain to the individual in its relation to the supposed interests of government.

VERGA, vĕr'gą, **Giovanni,** Italian author and dramatist: b. Catania, Sicily, 1840. A leading interpreter of Sicilian life, he was most widely known as the author, among numerous short stories, of 'Cavalleria rusticana' used by Mascagni for the libretto of his popular operetta. His chief works are 'I Malavoglia' (1881); and 'Maestro Don Gesnaldo' (1889). See CAVALLERIA RUSTICANA; and for biography and bibliography consult Croce, B., in 'Critica' (Vol I, Bari 1903).

VERGENNES, vĕr-jĕnz', Vt., city in Addison County, on Otter Creek, and on the Central Vermont Railroad about 35 miles west by south of Montpelier, 22 miles south of Burlington, and seven miles from Lake Champlain. In the summer there are regular steamboat connections with the lake ports. There is here a fall of 30 feet in Otter Creek. The city is the seat of the State Reform School, and has public and parish schools and a public library. There is one national bank with a capital of $150,000. The industries are connected chiefly with farm products. Vergennes was settled in 1766 and in 1788 was incorporated. It was the first incorporated city in the State. During the War of 1812 the city was an important naval depot; the fleet of Commodore McDonough (q.v.) was fitted out here. Pop. 1,483.

VERGNIAUD, vĕrn-yō, **Pierre Victurnien,** French orator: b. Limoges, 31 May 1753; d. Paris, 31 Oct. 1793. He settled as an advocate at Bordeaux in 1781, and quickly gained a large practice and was elected a deputy to the National Assembly in 1791. His eloquence and the charm of his personality soon made him the leader of the Girondists, but he cared little for political intrigue, and was rather the orator than the statesman. Representing in the Convention the department of the Gironde, he supported in the question of the king's trial, the proposal of Salle to make an appeal to the people. When the decisive moment came he voted for death, and as president it was his duty to announce the result. He opposed Robespierre and the party of the Mountain, but the Girondist party fell 2 June 1793, and on 31 October he was guillotined, the last of the 21 who died together. Consult Lamartine, 'History of the Girondists' (1847); Vatel, 'Vergniaud: Manuscrits, letters et papiers' (1875); Aulard, 'Les Orateurs de la Législative et de la Convention' (Vol. I); the Lives by Touchard-Lafosse (1848), and Verdière (1866); Stephens, H. M., 'The Principal Speeches of the Statesmen and Orators of the French Revolution' (1892).

VERHAEREN, vĕr-hā'rĕn, **Emile,** Belgian poet: b. Saint Amand, near Termonde, 21 May 1855; d. Rouen, 27 Nov. 1916. His works comprise over 40 volumes of lyrical and dithyrambic verses, four plays, and some monographs on painters. Though his writings had long been familiar among a small circle in America and England, it was not until the European War drove him into exile across the Channel that his reputation spread; and he became the greatest exponent of universal ideals in European poetry. The universities of England, Scotland and Wales conferred honorary degrees upon him and the English press published poems and articles from his pen. His last work, 'The Red Wings of War' contains a graceful tribute to England. 'Toute la Flandre,' a series of Flemish historical and legendary studies; 'Les Flamandes'; 'Les Tendresses Premières,' and 'Les Aubes' ('The Dawn'), are some of his best works. He was accidentally killed while attempting to enter a moving train. See DAWN, THE.

VERHAS, vĕr-häs', **Jan,** Belgian painter: b. Termende, 1834. He was educated in his native town and under Nicaise de Keyrer, whose painting school at Antwerp he attended. Among his works may be mentioned 'On the Landing Bridge at Blankenberyhe' (1885) and 'The Inundation.' He is one of the leading genre painters of the modern Belgian school.

VERJUICE, literally, green juice, applied to the sour juice of green fruit, especially from unripe grapes or crab-apples.

VERKOLJE, Johannes, Dutch painter: b. Amsterdam, Netherlands, 9 Feb. 1650; d. Delft, Netherlands, 8 May 1693. He was a pupil of Jan Livens, who, finding him possessed of ability, set him to finish some uncompleted pictures of Ghorardt von Zeijl, with the result that later an original painting of Verkolje's was mistaken for one of Zeijl's. The influence of Livens is not shown in Verkolj's work. He settled in Delft in 1672. His work for the greater part consists of portraits, though he painted in his leisure various mythological and historical subjects. His work includes 'Mother and Child,' Louvre; 'Lady and Trumpeter' (1678), Dresden Gallery; 'Cupid and Psyche,' Liechtenstein Gallery, Vienna; 'Vertumnus and Pomona' (1678), Wörlitz Gallery, etc.

VERLAINE, vĕr-lān, **Paul,** French poet: b. Metz, Lorraine, 30 March 1844; d. Paris, 8 Jan. 1896. He was one of the earliest and most prominent of the so-called «Symbolistes.» Among his first works were 'Poèmes Saturniens' (1865); 'Les Fêtes Galantes' (1869); and 'La Bonne Chanson' (1870). His next volumes 'Sagesse' (1881) and 'Les Poètes Inaudits' (1884), a volume of literary criticism, were followed by 'Jadis et Naguère' (1885); 'Romances sans Paroles' (1887); 'Amour' (1888); 'Bonheur' (1889) and 'Parallèlement' (1890); 'Dedicaces' (1894) and 'Confessions: Notes Autobiographiques' (1895). He is credited with introducing new possibilities of rhythm into French as a poetic medium. His collected 'Works' were published in 5 vols. (Paris 1900). Consult Lemaitre, J., 'Les Contemporains,'

(Paris 1889); Thorley, W., 'Paul Verlaine' (London 1914).

VERMEER, fĕr-mār', **Johannes** (erroneously styled JAN VAN DER MEER OF DELFT), Dutch painter: b. Delft, 31 Oct. 1632; d. there, 15 Dec. 1675. He was a pupil of Leonard Bramer and of Fabricius and painted landscapes, architectural views, with special care in the painting of figures to people such scenes. He also produced some portraits and genre pictures. While during his lifetime he filled a larger place in the contemporary art world and was dean of the Guild of Saint Luke at Delft, 20 years after his death he was almost forgotten, and omitted from Dutch and French 'Lives of Painters,' his very name up to 1816 being confounded with that of three other Dutch artists (Van der Meers). It has been ascertained that his father was Janssoon Vermeer, and written documents amply prove that his pictures were sold at a high price at a time when Rembrandt became bankrupt and poverty prevailed in Holland. One of Vermeer's finest works is 'A View of Delft' (now at The Hague); 'A Dutch Town' (crowded with figures) which was sold in 1872 for $1,785; and among his genres may be mentioned 'The Musical Party'; 'The Guitar-player'; and 'Young Woman with her Servant.'

VERMEERSCH, vĕr-mērch, **Arthur,** Belgian canonist and author: b. Ertvelde, East Flanders, Belgium, 26 Aug. 1858. He was educated at the Episcopal College, Ertvelde, at the Jesuit colleges of Liège and Namur, and at the universities of Louvain and the Gregorian, Rome. In 1879 he entered the Society of Jesus; was ordained in 1889, and in 1892 was made professor of canon law and subsequently also of moral theology at the Jesuit scholasticate of Louvain. In 1904 Dr. Vermeersch was appointed a collaborator in the codification of canon law ordered by Pope Pius X. In 1906 his writings on the Congo question attracted general attention. He was vice-president of the colonial section at the Catholic Congress of Mechlin in 1909 and in 1910 founded *La Revue Congolaise.* His published works are 'Manuel social' (2 vols.); 'Quæstiones de Justitia'; 'La nouvelle Encyclique sociale'; 'La question Congolaise'; 'Les destinées du Congo Belge'; 'Le Belge et la personne civile'; 'De Prohibitione et Censura Librorum'; 'De Religiosis Institutes et Personis' (2 vols.); 'De forma Sponsalium ac Matrimonii'; 'De Modernismo'; 'Acta Santæ Sedis'; 'Les missions Catholiques au Congo Belge'; 'La peur de l'enfant dans les classes dirigeantes'; 'L'intérêt et le devoir en Belgique'; 'La question Flamande'; 'Le problème de la natalité en Belgique'; 'Matrimonio e neomalthusianismo saggio ecligiososo medico-sociali'; and contributions to sociological and religious journals.

VERMEJO, vĕr-mā'hō, or **BERMEJO,** an affluent of the Paraguay. See BERMEJO.

VERMES, vėr'mēz, a class-name in the system of Linnæus under which he grouped as "worms" all the lower invertebrate animals except the arthropods (his "Insecta"). The varied components of this heterogeneous or omnibus group were first separated by Lamarck, and later have been still more minutely classified, as increased knowledge dictated until now the old Linnæan "class" is found to consist of nine phyla, and only a small proportion retains the name "worms," while "Vermes" has disappeared altogether as a scientific term.

VERMICELLI, vėr-mĭ-sĕl'ĭ or vėr-mĭ-chĕl'ĭ. See MACARONI.

VERMICULITES, a large group of micaceous minerals. The word is derived from the Latin *vermiculari,* "little worms," and has been applied because of the peculiar property of exfoliation which they possess. Some of the vermiculites exhibit this property in a very striking manner, unfolding when slowly heated, into curious curled filaments whose resemblance to worms seems more than fanciful. They are all hydrous silicates, formed by the alteration of the micas, chiefly biotite and phlogopite. They generally retain the eminent micaceous cleavage and pearly lustre of the original mineral. The laminæ are usually flexible, but not elastic. Included in the group are the minerals vermiculite, jefferisite and over a dozen others.

VERMIFORM APPENDIX. See APPENDICITIS.

VERMIGLI, vĕr-mēg'lē, Pietro Martire. See PETER MARTYR.

VERMILION, S. D., city, county-seat of Clay County; on the Missouri River at the mouth of the Vermillion and on the Chicago, Milwaukee and Saint Paul Railroad; about 34 miles northwest of Sioux City, and 28 miles southeast of Yankton. It was settled in 1859 by a colony from the Eastern States and was incorporated in 1877, it is an agricultural and stock-raising region. The chief manufactures are flour, wagons, sash, doors and blinds, and dairy products. There is considerable trade in farm products and livestock. The principal public buildings are the county courthouse, the opera house, and the school houses. There are seven churches. The educational institutions are the State University, a high school, founded in 1880; Saint Agnes' Academy, public and parish schools, and a public library. The three banks have a combined capital of $150,000. The average amount of business annually is $700,000. The government is vested in a mayor and a council of eight members, elected biennially. Pop. 2,376.

VERMILION, a bright red pigment, or the color of this pigment, obtained from crystallized mercuric sulphide.

VERMILION RANGE. See IRON ORES, *Iron Ore District.*

VERMIN, a term comparable to "weed," signifying small animals obnoxious in some particular to human plans and operations. Animals may be regarded as vermin in one place which in another would be classed as innocent or even beneficial. Thus among English gamekeepers all the weasel tribe — stoats, polecats and weasels — are typical vermin, because they kill game and eat eggs of preserved pheasants, etc., whereas in America they are regarded as useful fur-bearers; and in the United States rats, mice and the various "gophers" are the animals which mostly fall into that class. Rats and mice, especially field mice, may increase in such numbers as to destroy large quantities of grain and thus become decidedly destructive vermin, while serious loss may also be caused to

the farmer by hares and burrowing ground-squirrels, etc., especially in the Western States. Among birds, some of the hawks (see HEN-HAWKS) and owls are occasionally destructive to poultry and game and have been classified as vermin; but as they feed chiefly on insects and mice, they are on the whole beneficial to man by repressing animals which are far more typically named vermin than themselves.

In the economy of nature a balance of power is rigidly observed and in the maintenance of such a balance the so-called vermin play an important part. The lemmings (q.v.) present an instance of how the equilibrium is naturally restored. It is rarely needful or wise, at any rate with reference to birds and small mammals, for man to interfere when a case like that of the prairie-dogs (q.v.) of the western United States arises; where repression is necessary, it is usually the result of previous human interference with nature's arrangements. Agriculturists are beginning to recognize that the birds which visit their fields are of extreme value in the repression of the insects and their larvæ which feed on the tender shoots of the grain. But even admitting that the fields may occasionally suffer from the visitation of common birds, the damage inflicted thereby is but trifling when compared with their services in repressing the insect species. Even the much persecuted mole has been shown by Darwin to be a thorough fertilizer of the ground and the earthworm itself acts in this way also. Both animals, in fact, by their operations in turning over the soil, in bringing fresh layers to the surface and in breaking the clods, tend to open up the ground and thus to ensure favorable conditions for the germination of the seed. The despised and hunted rats al may be shown like the whelks and crabs of the sea, to play no unimportant part in nature's sanitary arrangements, by the wholesale destruction of offal and garbage in which they indulge. In America the use of the term vermin is often applied mainly to obnoxious insects, as fleas, bedbugs, lice, itch-mites, etc., that seek to live on human beings.

VERMONT, a North Atlantic State of the North American Union, situated in the north-western corner of New England. It is bounded on the north by the province of Quebec, the border line corresponding nearly to the latitude of 45° 0′ 43″, but the dividing line does not coincide exactly with the parallel as it is not quite straight, being here north of it and there south, though but very little. The eastern boundary was fixed many years ago as the west bank of the Connecticut River at low water. Since this was done the river has in some places changed its course more or less and from this difficulty has arisen between New Hampshire and Vermont and the matter is still undecided. On the south Vermont is separated from Massachusetts by the parallel of 42° 44′, while on the west is New York, from which Vermont is separated for 100 miles by Lake Champlain. Both the eastern and western borders of the State are irregular, but as a whole the area lies between long. 71° 33′ and 73° 25′ W. The northern border is 90 miles long and from this south the width decreases until at the Massachusetts line it is 41 miles. The length is 158 miles. The area is 9,565 square miles. The population in 1791 was given as 30,000 from which it has slowly increased to over 360,000. Vermont is thus one of the smaller States and this fact should be remembered when its resources and products are compared with those of other States. Notwithstanding this it is probably true that no other State has through the migration of its citizens to all parts of the United States, so deeply affected the character of other States where by reason of industry, thrift and intelligence they have become prosperous and influential. The Vermont delegation in Congress has always exercised a power quite out of proportion to the size of the State. The capital of Vermont is Montpelier in Washington County, a city located near the geographical centre of the State.

At first the whole area of what is now the State of Vermont was claimed by New York and included in Albany County, the courts of that county exercising jurisdiction. In 1768 a tract east of the Green Mountains was named Cumberland County. This included approximately what is now Windham and Windsor counties. Two years later Gloucester County was defined north of Cumberland and in 1772 on the western side of the mountains Charlotte County was formed. Finally, beginning in 1779 the present division of the State into 14 counties was made in the order given under «State Government.» The coat-of-arms adopted in 1862 consists of «a landscape of green occupying half of the shield, on the right and left in the background are high mountains, Mansfield and Camel's Hump, in blue with a sky of yellow. From near the base, extending nearly to the top of the shield, is a pine tree in green between yellow sheaves of grain and a red cow on the left side of the field.» The crest is a buck's head on a scroll of yellow and blue; the motto is «Vermont, Freedom and Unity»; the seal is the same as the shield, but circular and without any crest and the motto encircles the border.

Climate.— The climate of Vermont is, as is common in the north temperate zone, very changeable and subject to great differences. There is also considerable difference between the mountainous and less elevated portions of the State. The Champlain Valley, which includes most of that portion west of the Green Mountains, is more mild than elsewhere. Everywhere the winters are long and often cold while the summers are warm, but not often, nor for more than a few days, hot. The average temperature at the weather bureau in Burlington for five years (1913–17, inclusive) was 43.2° F. For each month the mean temperature for the same five years was as follows: January, 19.2°; February, 15.9°; March, 27°; April, 29°; May, 52.2°; June, 63°; July, 69°; August, 66.3°; September, 59°; October, 49°; November, 35°; December, 21.3°.

In most parts of the State the thermometer (Fahrenheit) in winter occasionally falls as low as 24° or lower and at times in midsummer it may rise to 90° or more, but these are unusual extremes and of short duration.

Severe storms are uncommon. Notwithstanding the uncertainty of the climate, the longevity of the inhabitants is reported as above the average for the whole country.

The rainfall is from 30 to 40 inches. During the winter the ground over most of the State is covered with snow and there may be good

sleighing for three months or more, but sometimes, in the western part especially, there is little good sleighing.

Physiography.—As has been shown, Vermont is long from north to south, narrow from east to west and the main physical features have a north and south trend. The Green Mountains dominate the State and have determined its physiography in a large degree. These mountains enter from Canada in two irregular ranges, uniting in one about the middle of the State and continue into Massachusetts. The range culminates in Mansfield, one point of which, the chin, is 4,406 feet above sea-level. By the range the whole State is divided into an eastern and western part and, while it is easy to pass from north to south, it is usually very difficult to find a passable road across from east to west. The mountainous character of Vermont is shown by the fact that, aside from innumerable smaller mountains and hills, there are in the State seven peaks over 4,000 feet, more than 40 over 3,000, more than 100 over 2,000 feet above sea-level. The Green Mountains are well-named for nearly all are clothed completely by forests. The trees at and near the tops of these mountains are mostly black spruce, though there are other conifers intermingled to some extent with these such as balsam fir, white spruce, cedar. Below the summits, covering the sides of the mountains, are all sorts of deciduous trees, that grow in a northern temperate climate, especially birch, beech, maple, etc. So dominating are the Green Mountains that some part of the range is in sight from nearly every town in the State, but these are not the only elevations. Between them and the New York border is a considerable range, the Taconics, which extend from somewhat north of the middle of the State south into Massachusetts. The principal mountains of the Taconic Range are Equinox, 3,816 feet; Bear Mountain, 3,290; Dorset, 3,804, and others 2,000 to 3,000 feet high. A third series of elevations is seen in the Red Sandrock Hills. These do not form a range but are simply a few isolated hills, most of them less than 1,000 feet high, though one, Hogback, is at the highest point, 1,850. Cobble Hill in Milton, Mount Philo in Charlotte and Snake Mountain in Addison County, are the best known of these. They are probaby remnants of a great mass of lower Cambrian sandstone with a little shale and quartzite, most of which has been carried off. All of these elevations are near Lake Champlain, that is, they are along the extreme western border of the State. Between the Green Mountains and the Connecticut River there is a series of low mountains or hills which extend nearly the whole length of the State, but only as separate elevations usually at a considerable distance from each other. These are the Granite Hills such as Burke Mountain, Robeson Mountain, Millstone Hill, Black Mountain, etc. From them come the granite which is so important an item in the industries of the State. One mountain, Ascutney, is in a class by itself, as it is of unique structure, being composed of material unlike that found elsewhere. The «Windsor Green Granite» is a syenite from this mountain.

Nestling in hollows among the numerous mountains are many lakes and ponds, probably not less than 400 in all. Most of these are small, less than two miles long and usually narrow, but a few, as Willoughby, Dunmore, Bomoseen and Saint Catherine are several miles in length and breadth. All of these bodies of water are very attractive and many wild and romantic.

Four rivers of considerable size flow into Lake Champlain, the Missisquoi, Lamoille, Winooski and Otter. The White, Passumpsic, West and others smaller, flow east into the Connecticut and several small streams enter Lake Memphremagog on the north. Along the valleys of these streams there is much level and fertile land and everywhere charming scenery. It may easily be understood that this delightful combination of mountains, lakes, rivers and the less frequent plains gives a character and variety to the physiography of Vermont such as for restful beauty can scarcely be equaled. Excellent roads make much of this easily accessible to the tourist.

Geology.— The geological features of much of Vermont are very complex and often obscure in detail, but the general structure has been satisfactorily made out. Practically the whole of what is now Vermont was formed as rock by the end of Ordovician time. By far the greater part of the rock is Cambrian and Ordovician but there is some pre-Cambrian to be seen and very likely there is more, completely covered. Thus Vermont is geographically one of the oldest portions of the United States. The oldest rock, as would be expected, is found in the axis of the Green and Taconic Mountains, but while probably this old rock exists throughout these ranges, it is found at the surface only in a few places, the great mass of these elevations being highly metamorphic Ordovician material. The Red Sandrock Hills as before stated, are Lower Cambrian and the Granite Hills are probably upthrusts of volcanic rock formed in the Devonian. In the immediate vicinity of Lake Champlain and on its islands unchanged beds representing Lower Cambrian and all the groups of Ordovician from Beekmantown to Utica are well-displayed and often full of characteristic fossils, but in other parts of the State fossils, though occasionally found in limited number, are rare and mostly wanting, the rocks being schists, slates, gneiss and similar rocks. The most abundant rock of the Green Mountains is gneiss; formed, as has been stated, by metamorphic action from older stratified beds. There is a small strip of Tertiary, best seen near Brandon, but except very small areas, no beds appear to have been deposited until the Pleistocene. It is, however, indicated by the structure of some of the granites that these were solidified under pressure of overlying masses which, now wholly carried away, may have been of some age not now represented in Vermont.

If what has been stated above be true then for an interval of time almost incalculable the surface of Vermont lay exposed to erosional agencies by which it must have been greatly modified, for, except the narrow band of Tertiary mentioned, there are no strata between the Ordovician and the Pleistocene. These latter deposits are everywhere the conspicuous features of the surface below the hills and mountains.

The great ice-sheet of the Early Pleistocene

and the floods that followed its melting have left abundant evidence of their activity everywhere. Whether there was a single movement of the ice over the surface or several cannot be determined. There was one so great that if there were others before it, as in many parts of the country, all traces of them have been obliterated and we have traces of but one, that of Later Wisconsin time. By the age-long erosion before the Pleistocene and the more rapid wearing and tearing of the rocks during glacial activity enormous quantities of solid rock were crushed, ground, worn to small bits and this loose material was seized by the torrents that followed the melting of the ice and distributed in sand hills, plains and deltas, gravel mounds, clay banks and all the rest of the many and plain evidences of the work of ice, water and atmospheric forces during long geological periods.

Mineral Resources.—Although mines of iron, copper, gold, manganese have in past years been opened and worked more or less in Vermont, none of them have in the long run been profitable, though iron and especially copper mines have for a time paid for working and there are still a few deposits of copper (Chalcopyrite) which are active. Asbestos has been mined to some extent. Talc is now mined more than ever before. There is good promise of increased work at these mines and during the last few years Vermont has produced more talc than any other State. Kaolin, ochre and fire clay are dug and purified, ready for market at Brandon, Bennington and several other localities. These industries are small when compared with the very large amount of marble, granite and slate which is annually quarried and sold. For more than a century Vermont has produced these materials in far greater quantity than any other State except Pennsylvania, which has exceeded this in slate. For many years the marble sold from Vermont was from 80 to 85 per cent of the entire sales for the whole country and, though latterly other localities have produced considerable amounts of good marble, Vermont still produces 43 per cent of the country's total.

Marble was quarried in Vermont at least as early as 1785, but only a few blocks were taken from small quarries in Dorset and West Rutland in the early days and the business did not become very important before 1850. Since this time the production and sale of marble has increased until at the outbreak of the war (1917) the annual sales reached a million cubic feet or more. While there are a few quarries outside of Rutland County, most of the marble comes from that region and is generally known as Rutland marble. Here the stone is a very pure lime carbonate and is mainly the result of more or less completely metamorphosed Ordovician limestone. The marble is mostly light in color and the variety in shade and tint is well nigh endless from pure white statuary to almost black. Blue, pink, yellow, gray and black veins, clouds and blotches are seen in different layers. These shades are distributed through a lighter mass and in varying proportion so that hardly two pieces of what are called "fancy marbles" are exactly alike. There may be more than 20 varieties, all fine, in a single quarry. On the other hand the standard varieties can readily be matched, if necessary, in color and shade. More than 100 shades of marble can be obtained in the quarries of the Vermont Marble Company, which controls by far the greater part of the marble of the State, but about 50 are as many as are usually kept on the market. The others are quarried when called for. At Swanton, in northern Vermont, a red and white dolomite is quarried and sold largely for floor tiling as it is very hard and durable and in Roxbury a very handsome serpentine marble, verde antique, is obtained, both by this company. These are not true marbles, but they are very beautiful for interior finish. The granite industry is of more recent development and it is only within a few years that Vermont has led the world in the production of this stone, but it has now a pre-eminence which seems certain to remain. The granite quarries are far more numerous and widely distributed than those of marble. As all the producing marble quarries are in the western part of the State, so all the granite is quarried east of the Green Mountains. It is of igneous origin and geologically later than the marble or slate. Barre, Hardwick, Woodbury and Bethel are the most important granite centres, but there are many other localities that produce smaller quantities. All Vermont granite is of lighter or darker shades of gray, no red granite being quarried, though there is a little in the State. The claim of Barre that it is the greatest granite centre in the world appears well-founded. At this place the annual payroll is reported by the board of trade as not less than $4,000,000. Mount Ascutney in Windsor, near the Connecticut River, is a peculiar intrusive mass and on its slopes there has been quarried the "Windsor Green Granite," which is a dark syenite of various shades of olive green. Columns in the library of Columbia University and the sarcophagi of President McKinley and his wife are examples of this stone. In normal business years the mineral products of the State reach an aggregate value of about $9,000,000. Slate is found on both sides of the Green Mountains, but for a long time all that has been sold has been taken from quarries in the extreme western border in Rutland County. Though not a very close second, Vermont produces more slate than any other State except Pennsylvania. The colors are mostly shades of green and purple, though gray slate is found.

The total amount of marble, granite and slate sold is large and increasing. It is difficult to get exact figures, but probably the sales are not less than $3,500,000 for marble, $3,500,000 for granite, $2,000,000 for slate.

Fauna and Flora.—Most of the larger mammals, as elk, moose, beaver, panther, have long been extinct in Vermont, though formerly common, but the deer, mink, otter, fisher, racoon, black bear are still found more or less commonly, while the weasel, skunk, woodchuck, porcupine, squirrels, etc., are common in many parts of the State. Among birds, eagles (golden and white-headed), owls, hawks and many ducks, waders and the common song-birds of New England are seen. In Lake Champlain and some of the smaller lakes many species of fish are taken and the supply is maintained by frequent stocking by the game and fish commission. There are stringent game laws protecting mammals, birds and fish. A not inconsiderable quantity of fish is shipped from Lake

Champlain to the large cities. These are mainly sturgeon, pike and pickerel.

The flora of Vermont is of great interest and beauty as it includes many species rarely found elsewhere, especially in the mountain localities. Nearly 1,700 botanical families and over 2,000 species are growing wild in the State. The families most numerously represented are the ranunculus, saxifrage, rose, composite, heath, lily, grass, sedge, orchid and fern. Forests once covered a large part of the State, but except on the mountains they have largely disappeared. Originally the white pine on the lower land and spruce on the upper were the predominant species but there are now more hardwood trees where the second growth has sprung up. At present the forests outside of the higher slopes are mainly composed of 11 species of oak, 8 of birch, 22 of willow, besides maple, beech, poplar, walnut, elm and others. The American elm grows to perfection in the river valleys and often in such localities is a most attractive feature of the landscape. At least 125 species of trees and shrubs grow native in the State. The flora of the Champlain Valley presents a number of western species not seen elsewhere in New England and the floras of the region of Willoughby Lake and Mount Mansfield have long been well-known to botanists.

Soil and Agriculture.—Although so irregular and often mountainous over much of its surface, Vermont possesses considerable fertile land and many excellent farms and very valuable products are obtained by argricultural operations. As in most regions in which the soil is the result, directly or indirectly, of glacial work there is great variety, often within small areas. Sand, clay, gravel, loam may all be found in the same not large field, but this is not always true. In some parts of the State there are wide stretches of heavy clay soil, elsewhere lighter and even sandy soil prevails, elsewhere loam. Large crops are raised on many of the farms, though there is, of course, in so mountainous a country, much barren or at least unproductive land. According to the latest figure, 1819, there are in the State 32,600 farms which range in size from 50 acres to over 1,000. Although there are more than 100 farms of over 1,000 acres, by far the larger number are small, the average size for the entire State being about 142 acres. The table below shows the main crops raised on the Vermont farms in normal years.

CROP	Acres planted	Bushels raised	Value
Corn	47,000	2,256,000	$1,895,000
Wheat	1,000	30,000	32,000
Hay	1,010,000	(tons), 1,515,000	21,240,000
Oats	81,000	3,483,000	1,846,000
Potatoes	24,000	2,592,000	2,100,000
Barley	12,000	420,000	315,000
Buckwheat	8,000	216,000	177,000
Rye	1,000	20,000	18,000

In 1918 the hay crop amounted to 1,291,000 tons; in 1918 the yield of oats was 4,223,000 bushels; corn 1,710,000 bushels; wheat 396,000 bushels, and barley 496,000 bushels. The potato crop in the same year was 1,743.50 bushels; the tobacco crop, 165,000 pounds. Apples, maple sugar and maple syrup are also of importance.

The average crop per acre is much greater in Vermont than the average for the whole United States, notwithstanding the rocky nature of many farms.

The above figures should be greatly increased to be accurate in war times, for not only are many more acres of all crops planted, but the market value is much greater than before. The latest estimates available, however, are those given.

Formerly Vermont was noted for its Morgan horses and fine grades of sheep, but of late both of these have declined to small numbers, though there are still some fine sheep raised and exported and also some horses. An effort to revive the production of Morgan horses has been made and bids fair to be successful. Many fine cattle are also raised and sold, especially Holsteins. The value of livestock was in 1917 as follows: Horses, $8,591,000; cattle, $11,828,892; sheep, $539,000; swine, $974,779. Other animals, $664,327. The total value of all agricultural products in 1917 was $38,943,301. The value of all farm property in 1910 was estimated at $145,399,728.

When the first white settlers came to Vermont they found the Indians making in rude fashion sugar from maple sap and by methods constantly improving maple sugar and syrup have been made from earliest times. In the early spring before most farm work can be undertaken the trees are tapped and the sap boiled, often before the snow is off the ground. Seasons vary, but the average annual production is given at 10,000,000 pounds having a value of over $2,000,000.

Vermont has long been known for the quantity and excellence of its dairy products. Much of the grain and hay raised is fed to dairy cattle and much land otherwise valuable for crops is given over to pasturage for the same purpose. The value of these products for 1917 is given as $12,128,000. In addition to butter and cheese a great deal of milk is sent to Boston and New York. In some parts of the State, notably in the immediate vicinity of Lake Champlain, many apples, pears and other fruits are raised, the crop for 1917 amounting to $1,191,429. The extensive forests which cover the mountains and their slopes afford a large amount of lumber which is sold at a value annually of $8,500,000. There are a State forestry department and 11 State forests which include in all 9,555 acres. Besides these forests which are directly under the control of this department, other forests over the State are administered under its advice and direction.

Manufactures.— Vermont is rightly regarded as an agricultural State, for a large part of its territory is in farm land, and a very large capital is invested in farms and their equipment, but the value of manufactured goods is far greater than that of the productions of the soil.

There are no less than 1,772 establishments, employing 36,467 persons with a capital of $79,846,775 and an output valued at $76,990,974. The 36,467 persons employed in industry in 1914 received $18,617,000 in wages, and by their labor added $34,256,000 to the value of the

raw product. Thus, the wage-earner received an average wage of $510. If we allow 6 per cent interest ($4,790,820) on the capital invested ($79,846,775) and 5 per cent ($4,000,000) for depreciation and other charges, there remains for the captains of industry a net profit of $6,848,180, a sum inordinately high (nearly 20 per cent of the total value added by manufacture) in view of the pittance paid the wage-earner who produced it. Of the total number of wage-earners only about 215 are under 16 years of age and for most of them the hours of labor are from 54 to 60 hours per week. The principal manufactures are paper and wood pulp, lumber and wooden ware, machinery, woolen and cotton goods, flour, agricultural implements and besides in less amount many other articles.

Transportation.—Long before the coming of white men in the 16th century Lake Champlain was undoubtedly a thoroughfare for the Indians and later the canoes of these people, the bateaux of the French and boats of the English went to and fro on warlike or peaceable errands and the principal rivers were also much used as highways from one part of the State to another. In 1795 Ira Allen went to England to urge building a ship canal which was to connect Lake Champlain and the Saint Lawrence. Another vain attempt was afterward made to connect the lake and the Connecticut River. In 1823 a canal from Lake Champlain to the Hudson River was finished. In 1808 a steamboat was launched on Lake Champlain and boats have been carrying freight and passengers ever since. A large amount of freight is also carried by canal boats which are towed up and down the lake and there are a few sailing vessels. But the lake traffic is far less than formerly before railroads skirting the shores were built. The first railroad in Vermont was completed in 1848. This ran between White River Junction and Bethel. In 1851 the Central Vermont Railroad was finished and on the west side of the State the Rutland Road about the same time and these two have always remained the principal roads. Next to these the Boston and Maine has most mileage. The Grand Trunk and Canadian Pacific pass through parts of the State, 16 other lines complete the roads of Vermont, the total mileage being 1,101. There are 115 miles of electric lines and numerous stage routes which connect inland towns with the railroads.

Education.—As early as 1761 Vermont appropriated tracts of land for school maintenance and sums of money were voted in 1782 for the same purpose. During the years that have passed since, the school system has gradually developed and in most respects wholly changed until it has attained its present efficiency by which it is placed in the front rank of the most advanced States. For many years the best secondary schools were the academies and in the 40's there were over 50 of these institutions in flourishing condition. Later as the public schools developed the academies disappeared until in 1900 only 17 remained and at present the high school more than fills their place. There are now 81 high schools and 28 junior high schools, 2,439 public schools, with 3,212 teachers and 63,962 enrolled pupils. The difficulty of securing properly trained teachers for the rural schools led the legislature of 1915 to pass a law by which such teachers are paid by the State an allowance in addition to what they receive from the town in which they teach, this allowance to be more or less as the training of the teachers is more or less. By this law it becomes of personal interest to each person who wishes to teach to secure as complete a preparation as possible. From 1856 to 1874 the school system was controlled by a board of education with its secretary as executive officer. This board was abolished in 1874 and its duties vested in a State superintendent who was elected at each session of the general assembly. In 1894 free textbooks were provided for all public schools and in 1906 all these schools were made entirely free. In the same year the State divided into school districts each with its superintendent. In 1908 manual training was adopted in several schools, in 1910 teacher training classes were established and in 1912 courses in domestic science were adopted in some of the larger schools. Soon after courses in agriculture were added. By act of legislature, 1912, a thorough investigation of the entire educational system of Vermont was authorized and a commission appointed to carry out the provisions of the act. This commission entrusted the survey to the Carnegie Foundation which published a report in 1914. As this report was prepared and the investigation made by educational experts it is of great value for many of its recommendations apply to other States as well as to Vermont. As the result of this work the school system was thoroughly revised. A board of education was appointed which elects a commissioner of education under whom is placed the whole management with the aid of 66 district superintendents. The State budget for schools in 1917 was $2,246,120 and this is increased by the income from over $200,000, a fund given to the State by Arunah Huntington, available since 1886. In addition to the public schools, Vermont has four colleges, two normal schools and two agricultural schools.

University of Vermont.—The first attempt to establish a college in Vermont was that of New York as a measure of conciliation in 1772. The institution was to be located in the town of Kingsland, now Washington, on the divide between the Connecticut and Lake Champlain. When this plan failed it was proposed to locate the college farther south in Williamstown, but finally through the influence of Ira Allen, who was a generous contributor to the new institution, it was placed in Burlington and chartered in 1791. Ira Allen was not only active in founding the University of Vermont, but was one of its first trustees. The first class was not graduated till 1804. Until 1865 the university was little more than an arts college, but in that year the general assembly incorporated the University of Vermont and State Agricultural College and in the same year the Agricultural Experiment Station was established. Engineering, first a department was developed into a college in 1866, the subject having been taught since 1829. A medical college, which was founded in 1809 and since 1853 affiliated with the university, was incorporated with it in 1899. An Agricultural Extension Service was begun in 1912.

Middlebury College is located in the town

of the same name amid beautiful scenery. This college has courses in arts and sciences and is coeducational. It was chartered in 1800. It has an excellent equipment and a faculty of 40; in 1917 there were 475 students.

Norwich University was founded as a military school in 1819. It has from the first made military instruction most prominent in its curricula, following closely the example of West Point. In 1834 it was incorporated and in 1866, the buildings at Norwich having burned, the institution was moved to Northfield. Besides the purely military courses, instruction is given in the arts and science. The students are cadets in the National Guard and form the "first squadron of the first Vermont cavalry." There is a faculty of 19 and a student body, 1917, of 145. Many eminent men have graduated from these institutions.

Saint Michel College is located at Winooski Park. It is carried on by the Brotherhood of Saint Edmund and is distinctly a Roman Catholic institution. It is largely given to secondary school work there being very few college students. In 1917 there were a faculty of 14 and about 100 students.

Public libraries are found in many of the Vermont towns, many of them in good memorial buildings. In all there are 221 of these besides 14 club libraries and there is a library commission which loans small libraries to towns not otherwise supplied. The library of the university contains 100,000 volumes besides many pamphlets; there is an excellent State library and a historical library at Montpelier and each of the colleges has a good library. Illiteracy is decreasing. At present about 5 per cent of the whole population may be classed as illiterates.

Government.— No other of the colonies adopted as completely a democratic form of government as did Vermont in 1777. This government continued until 1791, a period of 14 years, during which Vermont was an independent republic, as will be noticed later. In 1791, after several applications to the Continental Congress, Vermont was admitted to the Union as the 14th State. In the beginning there was a legislature composed of one house, the delegates, one from each town, being elected by popular vote. In addition to the legislature, or general assembly, there was a governor and 12 councillors. In 1836 a second house, the senate, was added. At present the house is composed of 248 members, one from each town as at first, while the senate has 30 members, from one to four according to population, being sent from each of the 14 counties. The lieutenant-governor is president of the senate, but the house elects one of its own number speaker. The sessions of the general assembly were annual until 1870; since then they have been biennial. The counties were formed gradually. At first there were two, Cumberland and Gloucestor, east of the Green Mountains, and two, Albany and Charlotte, west, but later these were divided into 14 which were established as follows: Bennington and Windham, 11 Feb. 1779; Orange, Rutland and Windsor, 22 Feb. 1781; Addison, 17 Oct. 1785; Chittenden, 22 Oct, 1787; Caledonia, Essex, Franklin and Orleans, 5 Nov. 1792; Grand Isle, 9 Nov. 1802; Jefferson, 1 Nov. 1810,— changed to Washington, 8 Nov. 1814; Lamoille, 26 Oct. 1835. The town meeting has always been one of the most cherished institutions of the State. This is held on the first Tuesday in March of each year. At the town meeting local officers are elected and such other business as may require the attention of the inhabitants transacted. State officers are elected biennially on each odd year, the election being set for the first Tuesday of November. Members of Congress are elected at the same time. The Australian ballot is used. Women over 21 years of age are entitled to vote, if they pay taxes, for town officers and for all matters pertaining to schools and temperance. Women may also be elected to several of the offices and to some of the State boards.

Vermont has always been strongly Republican and at present this party is in the proportion of three to one as compared with the Democratic party. The Legislature of 1919 was made up of 30 Republicans in the Senate and 244 Republicans, 25 Democrats and 1 Independent in the House.

Banking.— In the early days the people of Vermont appear to have had great distrust of banks and it was not until 1806 that the first State bank was chartered and then after long opposition. After an unprofitable career this bank closed in 1814, but in 1818 another attempt to start banks was made and one bank was established at Burlington and another at Windsor, one by one others followed until in 1841 there were 17 and in 1917 there were 48 national banks, with a capital of over $5,000,000 and surplus of $7,765,079.

There are 20 savings banks with deposits of $95,469,725 belonging to 218,372 depositors and 38 loan and trust companies with $2,050,000 capital and deposits of $47,609,696.

Like many other of the older States Vermont at first issued its own currency. The first bills were put into circulation in 1781. They ranged from a shilling to three pounds. In 1785 copper coins of the value of one cent were made and others of a different design were coined in 1888. Vermont has always greatly aided western industries by numerous loans. The assessed value of real estate in Vermont in 1918 was $170,566,493 and of personal property $61,772,240. Of course the actual value is much greater.

Finances.— The income of Vermont is mainly derived from direct taxes, trust funds, loans, inheritance, corporation taxes and numerous smaller sources. The real estate is appraised at $173,380,861, the personal property $66,059,545. For purposes of taxation the Grand List is fixed at $2,581,415, on which the tax for 1918 was $2.36 on the dollar. The usual running expenses are about $4,000,000. For a greater portion of its existence Vermont has been practically free from any debt, but war conditions have now and then made necessary a bond issue, as in 1917. There is a permanent school fund of over $1,000,000.

The Judiciary.— In 1763 an order was issued allowing "all judges, justices and other civil officers" who had commissions from New York to have authority as far east as the Connecticut River. At that time Vermont was entirely within the jurisdiction of Albany courts, but in many cases it was almost impossible to execute the decrees of these courts.

In 1778 special courts were organized in Vermont, but they did not long continue, a Superior Court taking the place, which continued four years.

In 1781 County Courts were established and in 1782 a Supreme Court was the highest authority in all legal affairs and so continued till 1906. In 1906 the judiciary was reorganized by constituting a Supreme Court with one chief justice and at first three, later four, associate justices and a Superior Court with six judges, both elected at each session of the general assembly. In the latter court the first judge elected was chief. Each superior judge is ex officio chancellor. The Supreme Court holds five sessions at Montpelier, one at Saint Johnsbury, Rutland and Brattleboro annually. The superior judges appoint one of their number to hold a Court of Chancery and preside in each County Court, two assistant judges sitting with him. These assistants judges are elected by popular vote. In addition to the above there are 14 municipal courts in as many of the larger towns. The Vermont judiciary has always been noted for its high standard, the soundness of its decisions, and clear-cut, logical deductions from the premises presented in pleadings; so much so, that a law library is not considered complete in the United States without a full set of volumes of the 'Vermont Reports.' The State, moreover, has pursued the policy of life-tenure, notwithstanding frequent elections, or during mental competency, insuring a stability of administration that does not always obtain where the elections of judges are by the people. The contrast between courts of this character and the "rough and ready" methods of dispensing justice to trespassers from New York in the "Grants," by Ethan Allen et al., is a paradox of Vermont's most wonderful history.

Charities and Corrections.— The usual home for destitute poor is found in every town. The State supports a large Hospital for the Insane at Waterbury with capacity of 700 patients and makes provision for the care of 200 at the Retreat at Brattleboro. There are hospitals for the sick or injured in many of the larger towns as well as several sanatoriums, relief associations, orphan children's homes, State Home for the Feeble Minded, etc. The State Prison at Windsor has usually about 200 inmates and the House of Correction at Rutland has over 700. For offenders who are minors there is a State Industrial School at Vergennes with 300 inmates. The penal institutions of the State are administered by a State board.

Militia.— The militia of the State are under the immediate command of the adjutant-general, the governor being ex-officio commander-in-chief. In peace times there are one regiment of infantry, a squadron of cavalry and sanitary and hospital corps, all enlisted as National Guard. In several of the larger towns there are well-equipped armories for the use of the local companies, built by State appropriations. The adjutant-general has a permanent office in the State House from which the affairs of the National Guard are administered. Legislative appropriations provide for all necessary expense. In the State there are, in round numbers, 775,000 men of military age from whom such troops as may be needed are taken.

Religion.— The people of Vermont have in general always been a religious community. The predominant denomination from the first has been the Congregational, but there are more than 20 other religious organizations in the State. The Congregationalists founded the first Protestant church in 1762 at Bennington, but there was a Roman Catholic chapel on Isle La Motte in 1666. This, however, was continued for only two years. The table below gives the date of the establishment of the larger denominations.

DENOMINATION	Place	Date
Roman Catholic	Fort Saint Anne (chapel)	1666–68
Roman Catholic	Burlington (church)	1831
Congregational	Fort Dummer (chapel)	1724
Congregational	Bennington (church)	1762
Baptist	Shaftsbury (church)	1768
Church of England	Capt. Jehial Hawley's (house)	1770
Protestant Episcopal	Arlington (church)	1786
Methodist Episcopal	Circuit Riders	1788–98
Universalist	Bennington (convention)	1795
Universalist	Barnet (church)	1803
Free Baptist	Strafford (church)	1794

The religious denominations are Roman Catholic, Congregational, Methodist Episcopal, Baptist, Episcopal and Universalist, established in the order given. Numerically the churches report as follows: Congregationalist, 216 churches, 22,979 members, $2,213,675 church property; Methodist Episcopal, 200 churches, 19,000 members, $1,355,000 church property; the Baptists report 115 churches, 9,439 members, $850,000 church property; Episcopal, 65 churches, 6,289 members; Christian Adventists, 22 churches; Seventh Day Adventists, 27 churches, 618 members; Universalists, 54 churches, 3,204 families, $353,000 church property. In addition to these, with smaller numbers, are Lutherans, Unitarians, Christian Scientists; other sects are very small in numbers. The Roman Catholics report 102 churches and 20 stations with congregations numbering 87,824. In early times there were many Quakers in the State and a number of meeting houses, but for many years no services have been held in any of them. At first the State granted two town lots of 200 acres each to the first permanent minister of whatever denomination and two lots to the Society for the Propagation of the Gospel. The former are devoted to the public schools.

History.— Samuel de Champlain was undoubtedly the first white man to sail through the lake to which his name was afterward given, it having been known to the French settlers as Lac des Iroquois. From his canoe he saw the "very high mountains to the east and the valley of the lake." Champlain tells us that his Algonkin allies with whom he sailed said that the country on both sides of the lake was then, in 1609, occupied by Iroquois tribes and that because of frequent hostilities there were no permanent villages near the lake, since they were too liable to attack by the frequent war

parties who went to and fro through the region. A half century later when the first white settlers came into the Champlain Valley they found it occupied by Algonkins, as was the whole of New England. So far as the numerous stone implements and pottery that have been found in western Vermont indicate both Iroquois and Algonkin tribes visited it if they did not form settlements. The facts are not to be fully ascertained, but all the evidence obtainable seems to show that the Champlain Valley was during several centuries prior to 1700 held now by the Iroquois, now by the Algonkins and that these latter people held the territory till finally driven out by the coming of Europeans. The New York side of the lake was, apparently, always occupied by the Iroquois as when the French and English settlers came into the region. That the Iroquois had some claim to the east side of the lake is shown by the fact that from 1798 until 1874 some of the Caughnawagas urged a claim to a large part of western Vermont because, as they declared, it had descended to them from their fathers. This claim was discussed for years by the Vermont general assemblies and carefully investigated, to be finally rejected as without foundation.

A few Indian villages were continued for some time after the white settlers took possession of the State. The longest to remain were some Saint Francis Indians who lived until after the Revolution on the Mississippi River a few miles below Swanton. There was a village of Coosucks on the Connecticut River in Newbury until 1725. A few Mohegans lived near Arlington and near the Massachusetts border the Moheakunnuks lived. These latter made claim to a considerable area as late as 1767 and about 1780 a tract of land was granted them in settlement of their claim. No full-blooded Indians now remain in the State, but there are still among those, counted as whites, a few who are more or less tinctured with Indian blood. Because of Champlain's discovery the territory about Lake Champlain was claimed by France and a part of it was included in New France in a map published at Paris in 1684. New France was bounded by a line drawn from Penobscot, Me., to the southern end of Lake Champlain and from there to the Mohawk River a little north of Schenectady. On the north it included the whole country drained by the Saint Lawrence. It is said that when Champlain first beheld the Green Mountains in the east as he paddled through the lake he exclaimed, "Voila les Verts Monts" and thus the name by which these mountains have since been known originated.

This journey of Champlain was as an ally of his Algonkin companions and with them they landed and attacked their Iroquois foes somewhere near Crown Point. Although aiding effectually his friends, Champlain by this attack with firearms, the first seen by the savages, incurred the hatred of the Iroquois and this led to most direful consequences later.

From this time until 1760 the white settlers as they came into the region were subject to frequent and often terrible attacks from their savage foes. A few years after Champlain's visit, Jesuit missionaries with dauntless courage and untiring zeal visited the Iroquois tribes, suffering incredible tortures, and often death. To protect so far as possible the French interests Fort Saint Anne was built on the western shore of one of the large islands (Isle La Motte) in Lake Champlain in 1664. The garrison was first commanded by Captain de la Motte from whom the island was named. The first Christian worship was conducted here in 1666 in a small chapel built in the fort. There does not appear to have been any settlement, other than a few military outposts, in the Champlain Valley, until, in 1730, a few families came from Canada to locate at Chimney Point where they built a rude fort. The following year a more serviceable fort was built across the narrow lake on what was later called Crown Point. This was named Fort Saint Frederic.

Carillon, later Ticonderoga, was fortified in 1755. The possession of these forts gave the French command of the lake, as at the points named it is very narrow and easily within range of even small guns. While the French had been moving from the north the English had come from the south and in 1724 a settlement and fort were established at Fort Dummer. Other forts, and where a fort was not needed stockades, were built in the years following and numerous Indian raids and massacres caused terror and suffering to the settlers. Of a number of settlements during these years the only one to become permanent was that at Fort Dummer.

The New Hampshire Grants.— The first grants of lands along Lake Champlain were of course made by France but after the French had been conquered in Canada by the English and had retired from Vermont as elsewhere, these grants were void and new allotments were made by the new rulers.

The territory of the new country was but very rudely divided for the most part, and New York and New Hampshire, both having been settled to a much greater extent, each laid claim to the unoccupied territory of Vermont. This dispute, which became very bitter, began in 1749. At this time Governor Benning Wentworth sent word to Governor Clinton of New York that he should grant unimproved lands as determined by King George's description of the province of New Hampshire, in which it was stated that the authority of New Hampshire extended as far west as that of Massachusetts which was "to a line twenty miles east of the Hudson River." The Council of New York, however, ordered the governor to reply that "this Province (New York) is bounded eastward by the Connecticut River." At the time he sent his communication to Governor Clinton, Governor Wentworth had already granted one township which in his honor was called Bennington. Later the question was laid before the king who some years afterward gave decision in favor of New York. The authorities of that State considered this decision as annulling all the grants made by Governor Wentworth, which by this time had become numerous.

They divided the territory which they claimed as their own, into four counties. The southwestern part was annexed to Albany, north was Charlotte, east Cumberland and north of this Gloucester Counties, these two being east of the Green Mountains. Those who had bought lands from New Hampshire were called upon to repurchase them from New York,

VERMONT.

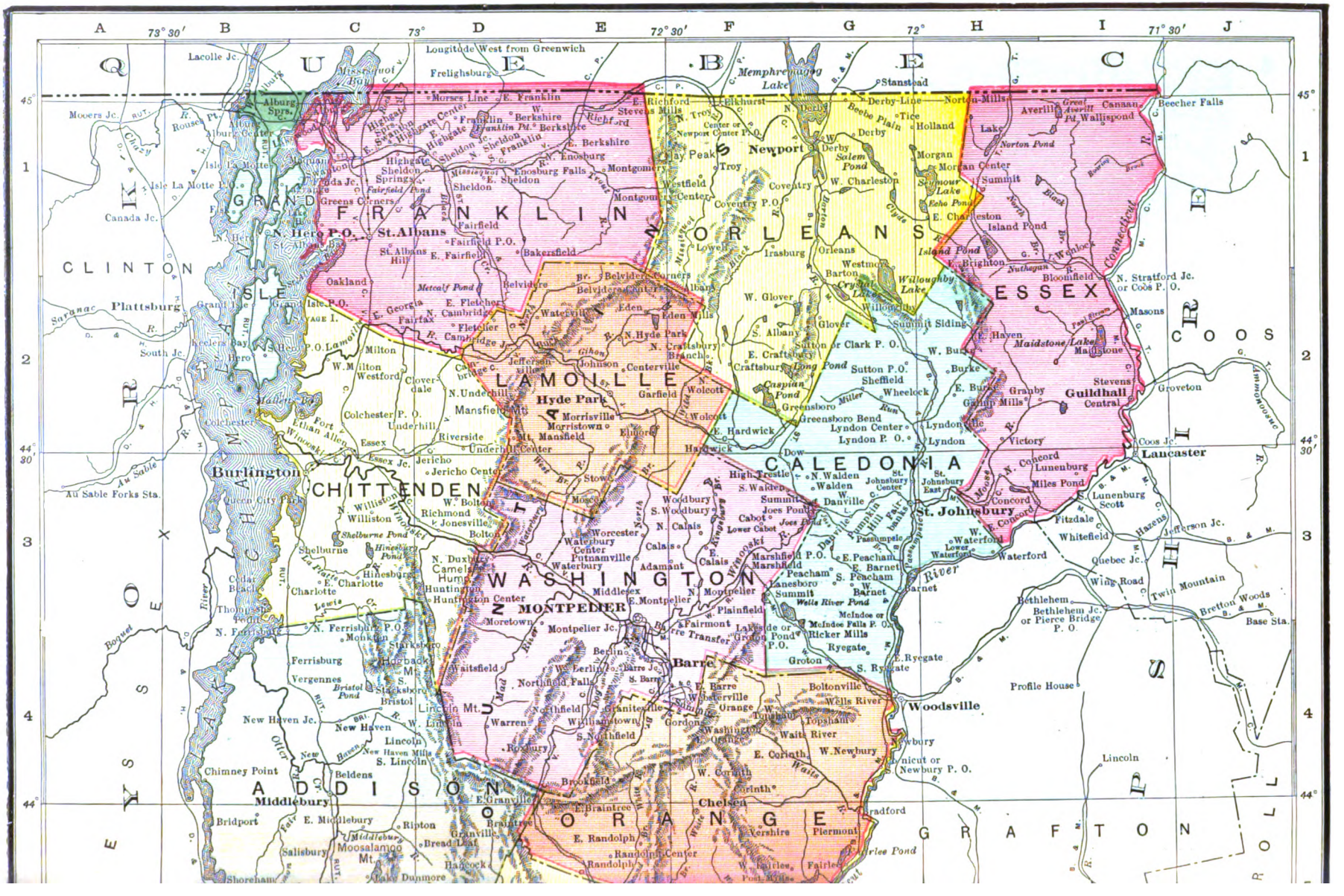
Estimated population, 363,699

COUNTIES

Pop.			Pop.		
20,010	Addison	C 4	12,585	Lamoille	E 2
21,378	Bennington	C 9	18,703	Orange	E 5
26,031	Caledonia	G 3	23,337	Orleans	F 1
42,447	Chittenden	C 3	46,139	Rutland	C 6
7,384	Essex	H 2	41,702	Washington	E 3
29,866	Franklin	D 1	26,932	Windham	D 8
3,761	Grand Isle	B 1	33,681	Windsor	E 6

Incorporated Cities and Villages

12,169	Barre	F 4	7,856	Montpelier	E 3
1,330	Barton	G 1	1,445	Morrisville	E 2
4,883	Bellows Falls	F 8	412	Newbury	G 4
9,114	Bennington	C 9	136	Newfane	D 9
42	Bennington Center, Bennington	C 9	2,546	Newport	F 1
			663	North Bennington	C 9
631	Bradford	G 5	1,918	Northfield	D 4
1,608	Brandon	C 5	771	North Troy	F 1
6,517	Brattleboro	E 9	1,131	Orleans, Orleans	G 1
1,080	Bristol	C 4	388	Plainfield	F 3
21,617	Burlington	B 3	1,474	Poultney	C 6
227	Cabot	F 5	2,756	Proctor	C 6
595	Cambridge	D 2	1,787	Randolph	E 5
666	Chester	E 7	835	Readsboro	D 9
339	Concord	H 3	1,948	Richford	E 1
316	Derby	G 1	828	Richmond	D 3
390	Derby Line	G 1	14,831	Rutland	D 6
1,153	Enosburg Falls	D 1	373	South Ryegate	G 4
1,245	Essex Junction	C 3	6,381	St. Albans	C 1
2,554	Fair Haven	F 1	8,781	St. Johnsbury	H 3
2,094	Hardwick	F 2	3,250	Springfield	F 7
242	Hinesburg	C 3	566	Stowe	E 3
423	Hyde Park	E 2	1,236	Swanton	C 1
1,573	Island Pond	H 1	1,483	Vergennes	C 4
212	Jacksonville	D 9	1,377	Waterbury	E 3
651	Johnson	E 2	608	Wells River	G 4
1,621	Ludlow	E 7	1,109	West Derby	G 1
259	Lyndon Center	G 2	430	Wilmington	D 9
1,573	Lyndonville	H 1	1,906	Windsor	F 7
478	Manchester	C 8	4,520	Winooski	C 3
1,866	Middlebury	B 4	1,383	Woodstock	F 6
634	Milton	C 2			


A
B
C
D
E
F
G
H
I
J
73° 30′
73°
72° 30′
72°
71° 30′
Longitude West from Greenwich
45°
44° 30′
44°
QUEBEC
GRAND ISLE
FRANKLIN
ORLEANS
ESSEX
CLINTON
LAMOILLE
CALEDONIA
COOS
CHITTENDEN
WASHINGTON
ADDISON
ORANGE
WINDSOR
GRAFTON
Lake Champlain
Memphremagog Lake
Connecticut R.
Missisquoi R.
Lamoille R.
Winooski R.
White R.
Ompompanoosuc R.
Passumpsic R.
Moose R.
Wells River
Newport
Derby Line
Norton Mills
Beecher Falls
Canaan
Averill
Averill Pd.
Wallispond
Norton Pond
Salem Pond
Seymour Lake
Echo Pond
Island Pond
Willoughby Lake
Crystal Lake
Maidstone Lake
Maidstone
Guildhall
Lancaster
Groveton
Stevens Mills
Granby
Gallup Mills
Victory
Coos Jc.
N. Stratford Jc. or Coös P. O.
Masons
Bloomfield
Brighton
Nulhegan R.
Wenlock
Clyde R.
Black R.
Barton
Orleans
Irasburg
Westmore
Glover
W. Glover
Albany
Craftsbury
E. Craftsbury
Craftsbury Common
Long Pond
Caspian Pond
Sutton or Clark P. O.
Sutton P.O.
Sheffield
Wheelock
Greensboro
Greensboro Bend
Lyndon Center
Lyndon P. O.
Lyndon
Lyndonville
Burke
E. Burke
W. Burke
Summit Siding
Haven
Jay Peak
Troy
Westfield
Westfield Center
Coventry
Coventry P.O.
Morgan
Morgan Center
Holland
Derby
Derby Center
Tice
Beebe Plain
Richford
Richhurst
N. Troy
Center or Newport Center P.O.
Stanstead
Mississquoi R.
Trout R.
Missisquoi Bay
Lacolle Jc.
Frelighsburg
Morses Line
E. Franklin
Franklin
Berkshire
Franklin Pt.
Berkshire
E. Berkshire
Enosburg
Enosburg Falls
Montgomery
Montgomery Center
Highgate
Highgate Springs
Highgate Center
E. Highgate
Sheldon
Sheldon Springs
Sheldon Jc.
E. Sheldon
N. Sheldon
Fairfield Pond
Fairfield
Fairfield P.O.
E. Fairfield
Bakersfield
St. Albans
St. Albans Hill
N. Hero P.O.
Alburg Sprs.
Alburg
Alburg Center
Isle La Motte
Isle La Motte P.O.
Canada Jc.
Mooers Jc.
Rouses Pt.
Greens Corners
Oakland
Metcalf Pond
Belvidere
Belvidere Corners
Belvidere Center
Albans
Eden
Eden Mills
Waterville
E. Georgia
Fairfax
E. Fletcher
N. Cambridge
Fletcher
E. Cambridge
Cambridge Jc.
Grand Isle
Grand Isle P.O.
South Hero
North Hero
Lamoille
P.O. Lamoille
Milton
W. Milton
Westford
Jericho
Jericho Center
Underhill
Underhill Center
Underhill Jc.
N. Underhill
Clover-dale
Mansfield Mt.
Hyde Park
Morrisville
Morristown
Mt. Mansfield
Elmore
Garfield
Wolcott
E. Wolcott
E. Hardwick
Hardwick
Johnson
Centerville
Jefferson-ville
Gihon
N. Hyde Park
N. Craftsbury
Craftsbury Branch
Colchester
Colchester P. O.
Fort Ethan Allen
Winooski
Essex
Essex Jc.
Riverside
Burlington
Queen City Park
Au Sable
Au Sable Forks Sta.
Plattsburg
Saranac R.
Lake Champlain
Shelburne
Shelburne Pond
Hinesburg
Hinesburg Pond
E. Charlotte
Charlotte
Thompson's Point
Cedar Beach
La Platte R.
Lewis Cr.
Williston
W. Williston
N. Williston
W. Bolton
Bolton
Richmond
Jonesville
Huntington
Huntington Center
Camel's Hump
N. Duxbury
Duxbury
Waterbury
Waterbury Center
Putnamville
Worcester
Moretown
Montpelier
Montpelier Jc.
E. Montpelier
N. Montpelier
Middlesex
Plainfield
Barre
Barre Jc.
Barre Transfer
Lakeside or Groton Pond P.O.
Groton
Ricker Mills
Ryegate
E. Ryegate
S. Ryegate
Adamant
Calais
E. Calais
N. Calais
Woodbury
S. Woodbury
Cabot
Lower Cabot
Joes Pond
Marshfield
Marshfield P.O.
E. Peacham
E. Barnet
S. Peacham
Peacham
Lanesboro
Summit
Barnet
Wells River Pond
McIndoe or McIndoe Falls P. O.
Waterford
Lower Waterford
Passumpsic
Danville
W. Danville
Joes Pond
Summit
S. Walden
N. Walden
Walden
High Trestle
Johnsbury Center
St. Johnsbury
St. Johnsbury East
Concord
N. Concord
Lunenburg
Miles Pond
S. Lunenburg
Scott
Fitzdale
Whitefield
Jefferson Jc.
Quebec Jc.
Wing Road
Twin Mountain
Bretton Woods
Base Sta.
Bethlehem
Bethlehem Jc. or Pierce Bridge P. O.
Profile House
Woodsville
Wells River
Boltonville
Topsham
Waits River
W. Newbury
Newbury
Lunenburg or Newbury P. O.
Lincoln
Chelsea
Tunbridge
Vershire
Piermont
Bradford
E. Corinth
W. Corinth
Corinth
Brookfield
E. Braintree
Braintree
Randolph
Randolph Center
W. Fairlee
Fairlee
Post Mills
Orfordville
Orange
Washington
Williamstown
Northfield
Northfield Falls
S. Northfield
Granite-ville
Gordon
Warren
Waitsfield
Mad R.
Winooski R.
Huntington R.
Dog R.
Stevens Br.
Worcester Br.
Woodbury Br.
Calais Br.
Wrightsville Br.
Danville Br.
Passumpsic R.
Joes Pond Br.
Lyndon Br.
Hardwick Br.
Wolcott Br.
Lamoille R.
Gihon Br.
Jeffersonville Br.
Cambridge Br.
Fletcher Br.
Georgia Br.
Lamoille Br.
Milton Br.
Winooski Br.
Essex Br.
Lewis Cr.
Otter Cr.
New Haven R.
Lemon Fair R.
Middlebury R.
Hancock Br.
Granville Br.
Braintree Br.
Randolph Br.
White R.
Ompompanoosuc R.
Connecticut R.
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Moose R.
Stevens Br.
Lunenburg Br.
Concord Br.
Waterford Br.
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Passumpsic R.
Wells River Br.
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Orfordville Br.
Tunbridge Br.
Vershire Br.
Piermont Br.
Bradford Br.
Fairlee Br.
Fairlee Pond
Lake Dunmore
Moosalamoo Mt.
Lincoln Mt.
Chimney Point
New Haven Jc.
New Haven
New Haven Mills
S. Lincoln
Lincoln
Beldens
Middlebury
E. Middlebury
Bridport
Ripton
Salisbury
Shoreham
Dread-Leaf
Hancock
Granville
Braintree
E. Granville
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E. Corinth
Waits River
Newbury
Topsham
Wells River
Boltonville
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Granite-ville
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Warren
Waitsfield
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Northfield Falls
S. Northfield
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Barre
Barre Jc.
Barre Transfer
Lakeside or Groton Pond P.O.
Groton
Ricker Mills
Ryegate
E. Ryegate
S. Ryegate
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Marshfield P.O.
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S. Peacham
Peacham
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N. Walden
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St. Johnsbury East
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Miles Pond
S. Lunenburg
Scott
Fitzdale
Whitefield
Jefferson Jc.
Quebec Jc.
Wing Road
Twin Mountain
Bretton Woods
Base Sta.
Bethlehem
Bethlehem Jc. or Pierce Bridge P. O.
Profile House
Woodsville
Wells River
Boltonville
Topsham
Waits River
W. Newbury
Newbury
Lunenburg or Newbury P. O.
Lincoln
Chelsea
Tunbridge
Vershire
Piermont
Bradford
E. Corinth
W. Corinth
Corinth
Brookfield
E. Braintree
Braintree
Randolph
Randolph Center
W. Fairlee
Fairlee
Post Mills
Orfordville
Orange
Washington
Williamstown
Northfield
Northfield Falls
S. Northfield
Roxbury
Barre
Barre Jc.
Barre Transfer
Lakeside or Groton Pond P.O.
Groton
Ricker Mills
Ryegate
E. Ryegate
S. Ryegate
Adamant
Calais
E. Calais
N. Calais
Woodbury
S. Woodbury
Cabot
Lower Cabot
Joes Pond
Marshfield
Marshfield P.O.
E. Peacham
E. Barnet
S. Peacham
Peacham
Lanesboro
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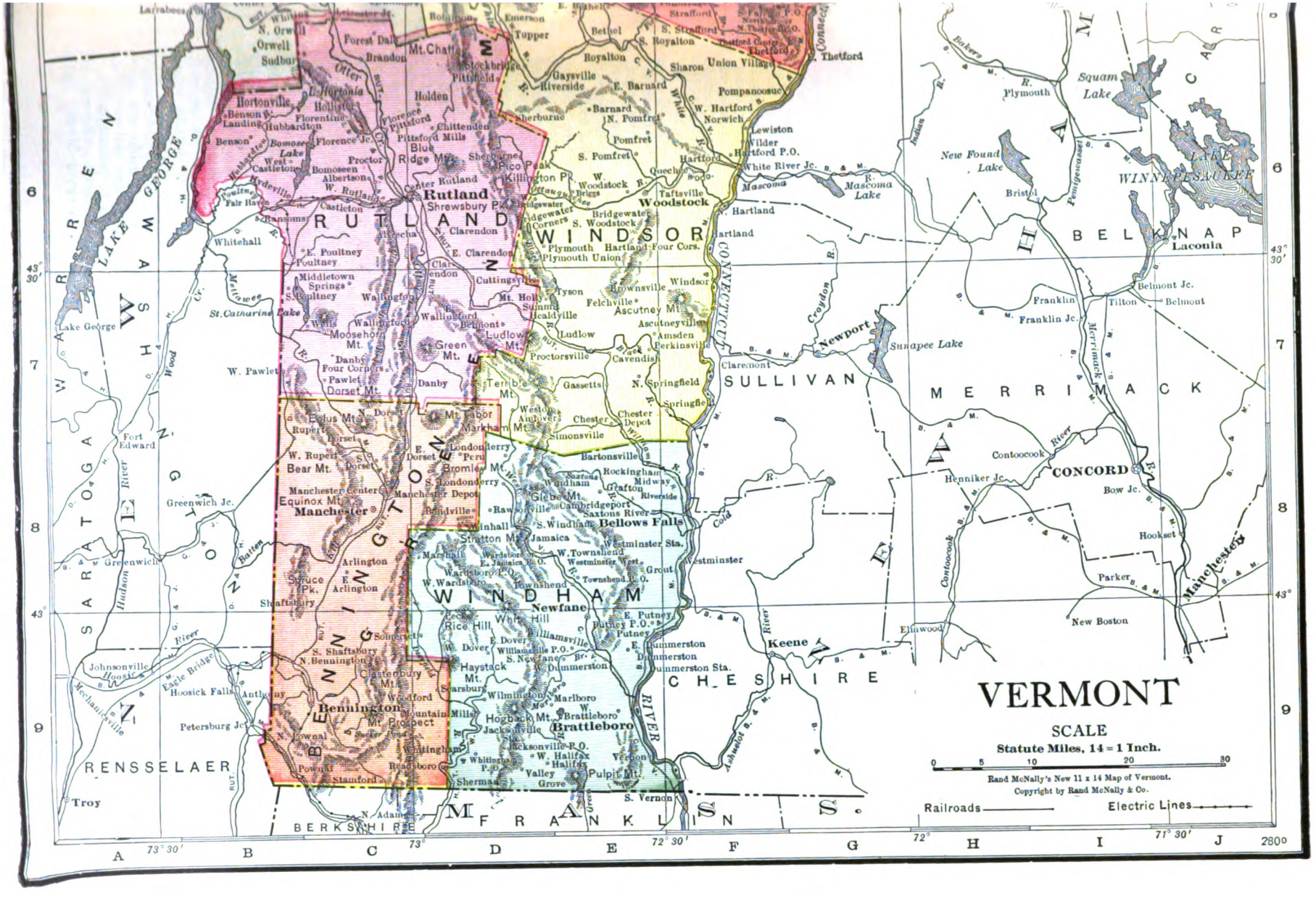
Profile House
Woodsville
Wells River
Boltonville
Topsham
Waits River
W. Newbury
Newbury
Lunenburg or Newbury P. O.
Lincoln


VERMONT
SCALE
Statute Miles, 14 = 1 Inch.
0 5 10 20 30
Rand McNally's New 11 x 14 Map of Vermont.
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Railroads
Electric Lines
RUTLAND
WINDSOR
WINDHAM
BENNINGTON
CHESHIRE
SULLIVAN
MERRIMACK
BELKNAP
FRANKLIN
WASHINGTON
ORANGE
ESSEX
CALEDONIA
RENSSELAER
SARATOGA
WARREN
LAKE GEORGE
BERKSHIRE
Rutland
Shrewsbury Pk.
Woodstock
Bellows Falls
Manchester
Brattleboro
Bennington
Newfane
Keene
CONCORD
Laconia
Claremont
Newport
Troy
Fort Edward
Greenwich Jc.
Petersburg Jct.
Hoosick Falls
Johnsonville
Mt. Chaffee
Mt. Holly
Green Mt.
Mt. Tabor
Stratton Mt.
Glebe Mt.
Haystack Mt.
Hogback Mt.
Pulpit Mt.
Mt. Prospect
Lake George
St. Catherine Lake
Lake Champlain
Sunapee Lake
Mascoma Lake
Newfound Lake
Squam Lake
Winnipesaukee
Connecticut R.
Otter Creek
Battenkill R.
Mettawee R.
Poultney R.
Hoosic R.
Deerfield R.
Ashuelot R.
Cold R.
Sugar R.
Croydon R.
Contoocook R.
Merrimack R.
Pemigewasset R.
Indian R.
Baker R.
Williams R.
White R.
Ompompanoosuc R.
Quechee Gorge
Taftsville
Hartland
Windsor
Springfield
Chester
Ludlow
Proctorsville
Cavendish
Gassetts
Bartonsville
Rockingham
Saxtons River
Westminster
Grafton
Cambridgeport
Townshend
Jamaica
Newfane
Williamsville
Putney
Dummerston
Brattleboro
Marlboro
Wilmington
Bennington
Manchester
Arlington
Shaftsbury
Sunderland
Dorset
Danby
Wallingford
Poultney
Castleton
Hubbardton
Orwell
Sudbury
Brandon
Pittsford
Rutland
Proctor
Florence
Chittenden
Mendon
Killington Pk.
Pico Peak
Sherburne
Barnard
Pomfret
Sharon
Royalton
Bethel
Tunbridge
Strafford
Thetford
Lebanon
Hanover
Enfield
Canaan
Colebrook
Berlin
Littleton
Woodsville
Wells River
Barre
Montpelier
Northfield
Waterbury
Stowe
Morrisville
Hyde Park
Johnson
Lyndonville
St. Johnsbury
Wells River
Groton
Plymouth
Bristol
Meredith
Laconia
Belmont
Tilton
Franklin
Concord
Henniker
Hillsboro
Antrim
Peterborough
Jaffrey
Rindge
Fitzwilliam
Winchendon
Athol
Orange
Wendell
Shelburne Falls
Greenfield
Deerfield
Northampton
Amherst
Belchertown
Ware
Palmer
Monson
Brimfield
Holland
Sturbridge
Southbridge
Webster
Dudley
Oxford
Charlton
Auburn
Worcester
Millbury
Grafton
Upton
Milford
Hopkinton
Ashland
Framingham
Natick
Wellesley
Newton
Boston
Quincy
Braintree
Weymouth
Hingham
Cohasset
Scituate
Marshfield
Duxbury
Kingston
Plymouth
Wareham
Buzzards Bay
Falmouth
Woods Hole
Martha's Vineyard
Nantucket
Cape Cod
Provincetown
Chatham
Orleans
Hyannis
Barnstable
Sandwich
Plymouth
Taunton
Fall River
New Bedford
Dartmouth
Westport
Rochester
Mattapoisett
Marion
Middleborough
Lakeville
Freetown
Somerset
Swansea
Seekonk
Rehoboth
Attleboro
North Attleboro
Mansfield
Norton
Easton
Stoughton
Canton
Milton
Dedham
Needham
Wellesley
Weston
Lincoln
Concord
Carlisle
Acton
Boxborough
Harvard
Bolton
Berlin
Clinton
Lancaster
Sterling
Leominster
Fitchburg
Ashburnham
Gardner
Templeton
Winchendon
Rindge
Jaffrey
Peterborough
Hillsboro
Henniker
Contoocook
Hopkinton
Warner
Bradford
Newbury
Wells River
Groton
Peacham
Danville
St. Johnsbury
Lyndonville
Barton
Orleans
Newport
Derby Line
Stanstead
Sherbrooke
Magog
Coaticook
Richmond
Drummondville
Granby
Farnham
Cowansville
Bedford
St. Johns
Rouses Point
Plattsburgh
Port Kent
Essex
Westport
Willsboro
Elizabethtown
Lewis
Keene
Jay
Upper Jay
Wilmington
Whiteface Mt.
Lake Placid
Saranac Lake
Tupper Lake
Malone
Chateaugay
Huntingdon
Valleyfield
Beauharnois
Chateauguay
Lachine
Montreal
Laprairie
St. Lambert
Longueuil
Sorel
Three Rivers
Joliette
Berthierville
Lanoraie
Repentigny
Terrebonne
St. Jerome
Ste. Agathe
St. Sauveur
Ste. Adele
Lachute
Hawkesbury
Cornwall
Massena
Ogdensburg
Potsdam
Canton
Gouverneur
Watertown
Carthage
Lowville
Boonville
Rome
Utica
Little Falls
Herkimer
Ilion
Frankfort
Mohawk
Amsterdam
Johnstown
Gloversville
Fonda
Canajoharie
Fultonville
Schoharie
Cobleskill
Middleburgh
Sharon Springs
Cherry Valley
Richfield Springs
Cooperstown
Oneonta
Unadilla
Sidney
Bainbridge
Norwich
Oxford
Greene
Afton
Guilford
Sherburne
Earlville
Hamilton
Morrisville
Cazenovia
Canastota
Oneida
Wampsville
Chittenango
Manlius
Fayetteville
Syracuse
Jordan
Elbridge
Auburn
Weedsport
Port Byron
Cayuga
Seneca Falls
Waterloo
Geneva
Penn Yan
Dundee
Watkins Glen
Montour Falls
Elmira
Corning
Painted Post
Hornell
Canisteo
Arkport
Hammondsport
Bath
Addison
Wellsboro
Mansfield
Tioga
Owego
Waverly
Sayre
Athens
Towanda
Troy
Canton
Elmira
Ithaca
Cortland
Homer
Marathon
Whitney Point
Binghamton
Endicott
Johnson City
Vestal
Owego
Candor
Spencer
Van Etten
Horseheads
Big Flats
Wellsville
Andover
Alfred
Almond
Hornellsville
Canisteo
Arkport
Hammondsport
Bath
Addison
Wellsboro
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Waverly
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Endicott
Johnson City
Vestal
Owego
Candor
Spencer
Van Etten
Horseheads
Big Flats
Wellsville
Andover
Alfred
Almond
Hornellsville

Naturally the occupants of the lands, upon which some of them had expended much money and labor, refused to give them up or to pay for them a second time. New York granted ejectments against the settlers and sent constables to enforce them. A convention of the injured settlers was called and by it Samuel Robinson of Bennington was sent to England to lay the grievances before the king. As the result of Mr. Robinson's visit, the king commanded the governor of New York to make no grants till his majesty's pleasure should be made known. This was in July 1767. The Council of New York did not wholly submit to this decree of the king but declared that it did not apply to lands not already granted by New Hampshire and continued giving grants to those who applied.

As the fees required from the grantees were from $100 to $700 or more, the governors of both States were unwilling to lose the rich harvest thus brought them and it is said that considerable fortunes were gained by each of them from this source. Ethan Allen became first known by the part he took in this controversy. The Vermont settlers resisted by force the attempts of New York sheriffs to take possession of lands held under New Hampshire grants and in some cases confirmed them by "the beech seal" that is they flogged the sheriffs who came to enforce New York claims with what Allen called "twigs of the wilderness." The struggle did not wholly cease till Vermont was admitted into the Union. It was in the enforcement of the claims of the Vermont settlers that the Green Mountain Boys were organized. These were a military force, composed of daring and determined men commanded by Ethan Allen.

Allen and four brothers had come from Connecticut and taken lands under grants from New Hampshire and these they were fully prepared to defend to any extent that might be necessary. In the long and sometimes severe struggle the settlers for the most part held their lands against New York.

Founders of the State.— The experiences undergone during the stormy times just described not only secured beyond further dispute the homes of the settlers on the New Hampshire Grants, but they gave to these hardy pioneers a training which well-fitted them to become founders of a State that should be a power. There were many sturdy, honest and brave men in those days and men of strong thinking as well. It may not be altogether fair to select a few from the many, but probably most would agree that of them all Ethan Allen, Ira Allen, Seth Warner, Remember Baker, Thomas Chittenden and Jonas Fay were preeminent. Vermont would not have been what it was during the century following the Revolution had not these men been among its citizens. Most of these are too well known to most Americans to need more than the mention of their names. Perhaps Jonas Fay is least known. He was a clerk of many public meetings, of the Council of Public Safety and wrote the declaration by which the State was established as an independent republic.

Beginning of the Republic of Vermont.— In pre-Revolutionary times Vermont had little that could properly be called a government. Each town was controlled by its "Committee of Safety" and there was no higher authority recognized. Under such conditions there was of necessity little unity. But the people were not long satisfied with this and on 13 March 1775, there came a change which was far reaching in its results. On that day Judge Chandler was to hold court at Westminster. Those interested assembled without arms, took possession of the court-house (illustration from drawing by Daniel Hall). This building was taken down in 1806.

At first there was no disturbance or attempt to use force to prevent the convening of the court, but a sheriff's posse was collected to disperse the crowd and, apparently without sufficient provocation, fired upon them and mortally wounded William French — who has been called "The proto-martyr to the cause of American liberty."

Court House, Westminster.

No other person was killed at the time but several were wounded and Daniel Houghton died afterward from his wounds. The sheriff's party claimed that they were fired on first, but none of them were in any way injured and a long discussion of the affair which followed did not establish the truth of their claim. This event has ever since been known as the "Westminster Massacre." On 11 April 1775 a convention of Committees of Safety held at Westminster, adopted a remonstrance to the court of Great Britain in which they begged "To be taken out of so oppressive a jurisdiction and either annexed to another jurisdiction or incorporated into a new one." Ethan Allen was prominent in this convention and proved himself fully equal to the emergency. For three or four years before this he had organized the settlers, forming councils of safety and military companies.

There were no organizations in the colonies more satisfactory or trustworthy than those which Allen formed and inspired with somewhat of his own vigor and enthusiasm for freedom. The new jurisdiction mentioned in the request of the Westminster Convention was probably a proposed Royal Colony which was to include the New Hampshire Grants west of the Green Mountains and all the territory north of the Mohawk River and east of Lake Ontario, the capitol to be at Skeenesboro, N. Y. (Whitehall). It was proposed also that Philip Skene should be governor of this new province. Ethan Allen, William Gililand and Jehiel Haw-

ley and other Vermonters of prominence were active in this undertaking, but the outbreak of hostilities at Lexington, 19 April 1775, only eight days after this convention finally set aside this plan. But such people as the early Vermonters could not long remain inactive and ere long another convention was called to meet "at Mr. Cephas Kent's in Dorset." This convention was "duly warned" by a committee and was to "raise troops" and transact whatever business might seem necessary. The warning also contained the significant article "To see whether the convention will consent to associate with New York, or act by themselves in the cause of America." This convention met on 16 Jan. 1776 and authorized the drawing up of a remonstrance and petition which should be presented to the Continental Congress. In accordance with this action such document was duly prepared and presented at another convention held in the same place on the 24th of July of the same year. The remonstrance and petition were adopted by the convention and with this paper was a recapitulation of more recent occurrences relating to the New Hampshire Grants and included the king's decree of 1767.

The convention begged that they might not "be put under the jurisdiction of New York, but allowed to remain in that of New Hampshire." The conditions were rapidly growing worse and were already unbearable. Various rumors of the movements of troops were common and disturbing and the following declaration of loyalty was signed by all but one of the members of the convention.

"We the subscribers, inhabitants of that district of land, commonly called and known by the name of the New Hampshire Grants, do voluntarily and solemnly engage, under all the ties held sacred amongst mankind, at the risque of our lives and fortunes to defend, by arms, the United American States against the hostile attempts of the British fleets and armies, until the present unhappy controversy between the two countries shall be settled."

At an adjourned convention, held at the same place, 25 Sept. 1776, a covenant or compact was formulated,—58 delegates present and "Cumberland and Wilmington or Draper by letter," representing 35 towns, 10 of which were on the "East side,"—that still further raised the framework of the future independent State. Ethan Allen was a prisoner with the British. It was voted unanimously: "That suitable application be made to form that district of land, commonly called and known by the name of the New Hampshire Grants, into a separate district." A "Committee of War" was appointed to act as the government, civil and military, *ad interim*, namely: Simeon Hathaway, Jonas Fay, Nathan Clark, Joseph Bradley, Martin Powell, Cephas Kent, Joseph Bowker, Joseph Woodward, Nehemiah Howe; 15 Jan. 1777 following were added from the "East side." Thomas Chandler, Stephen Tilden, Ebenezer Harrington, Joshua Webb, Dennis Lockland, Jotham Bigelow, Thomas Johnson, Elijah Gates, Nicholas White. At the October convention, and the January meeting, Ira Allen served as clerk,—both held at Westminster. Events had moved rapidly in the "Grants" or in the embryo commonwealth. The people of the Green Mountains, loyal to freedom from Great Britain and discredited in their contention with contiguous territory, were ready to take an independent step. Accordingly, at Westminster, 15 Jan. 1777 in the Court-House, the following was promulgated:

"This Convention (whose Members are duly Chosen by the Free Voice of their Constituents in the several Towns on the N. Hampshire Grants) in public Meeting Assembled, in our own names and in behalf of our Constituents, Do hereby Proclaim and Publickly declare that we will at all times hereafter consider ourselves as a free and independent State, capable of regulating our internal police in all and every respect whatsoever, and that the people on said Grants have the sole and exclusive right of ruling and governing themselves in such manner and form as in their own wisdom they shall think proper, not inconsistent or repugnant to any resolve of the Honorable Continental Congress.

Furthermore, we declare by all the ties which are held sacred among men, that we will firmly stand by and support one another in this our declaration of a State, and in endeavoring as much as in us lies to suppress all unlawful routs and disturbances whatever.

Also we will endeavor to secure to every individual his life, peace, and property against all unlawful invaders of the same.

Lastly we hereby declare, that we are at all times ready in conjunction with our brethren in the United States of America to do our full proportion in maintaining and supporting the just war against the tyrannical invasions of the ministerial fleets and armies, as well as any foreign enemies sent with the express purpose to murder our fellow brethren and with fire and sword to ravage our defenseless country. The said State to be called New Connecticut."

The above is not exactly in the original form, but as it was later revised and published.

At the next convention held in June the name New Connecticut, given for the reason that a large part of the original settlers had come from Connecticut, was found to be already used for a district on the Susquehanna. For this reason the new State was renamed Vermont. There is some uncertainty as to the origin of this name.

It is generally supposed to have been suggested by Dr. Thomas Young of Philadelphia, an old and enthusiastic friend of the "Grants" and a trusted adviser, but this does not determine where Dr. Young found the name. Did it come from the often quoted exclamation of Champlain, "Voila les Verts Monts," or did it come, as some suppose from a letter which one Saint John de Crevecoeur is said to have written to Ethan Allen asking that "as Vermont is entirely French" some of the counties have French names given them? Crevecoeur is supposed to have suggested Vermont because he had in mind L'Abbe de Vermont, reader to Marie Antoinette. This is given for whatever it may be worth. As also the following statement which refers to the Rev. Samuel A. Peters, DD., LL.D., the first Church of England clergyman to visit this district, and who was afterward chosen Bishop of Vermont, but never consecrated. Dr. Peters, in October 1763, climbed a high mountain in the "Grants," where the waters of Lake Champlain could be seen on the one hand, and those of the Connecticut River on the other, and broke a bottle upon a rock, naming the territory "Verdmont," dedicating it to God. Little credence was given to this alleged incident, because of the repeated failures to find such a location. Mounts Mansfield and Camel's Hump, and Knox Mountain in Orange County, were each ascended without results; but, in 1880, Spruce Mountain in Plainfield was selected for an ascent from Bradford, where the Peters family settled, and the conditions found at the summit served to confirm the Dr. Peters' claim.

The preamble to the Vermont Declaration of Independence, reciting the grievances of the patriots and their sufferings, entailed by the

British government, is a monument to the 72 Vermonters, who again swore fealty to the national cause. The Continental Congress, while failing to give them any satisfactory response to numerous petitions, began to recognize its Green Mountain troops as reliable allies, and the mili-

Constitution House, Windsor.

tary was receptive of honors. Warner had been promoted to colonel, and others prominent in Vermont affairs were possessors of commissions in the Continental line. But the days were dark for the country. Outside the camp of Gen. George Washington, and this circle of Green Mountain patriots, the probability that the American Colonies would become independent of Great Britain was very faint. Gen. John Burgoyne, with an army deemed invincible, was marching southward from Canada. He was met by the Vermonters so aggressively that he likened them to "a gathering storm on my left." The convention to adopt a constitution for the independent State met in the "Old Constitution House" at Windsor 2–8 July 1777 in the shadow of this environment. The constitution had been read and adopted, "section by section," and was about to be put upon its final passage, when news came, 8 July, of the disastrous situation in the northern department. The result at Hubbardton the previous day was unknown, but many families of the representatives lived in the route of Burgoyne's advancing and victorious army. The motion to immediately adjourn was about to be carried, when the heavens, as if to complete the British general's metaphor, added the artillery of a terrific thunder-storm as a concomitant. The enforced delay caused a sober second-thought, and the business of the convention was completed before the hurried adjournment and departure occurred.

As soon as possible the new State adopted such laws as were needed and means of enforcing them. For the first time slavery was forever prohibited, freedom in religious matters, freedom of speech and of the press guaranteed and the right to vote given to every man over 21. Vermont as an independent State was not more liberal than any of the 13.

Vermont in the Revolution.—Although thus independent, Vermont did not shirk such duties as were necessary to the States in the Union. Perhaps the most spectacular event in the Revolutionary history of Vermont is the capture of Ticonderoga 10 May 1775 (on the day the Revolutionary Congress assembled) and the part taken by the "Green Mountain Boys," at Bennington, 16 Aug. 1777. Generalship of this character would not neglect the commissary department, and the Continental storehouse at Bennington, filled with supplies, was a reality. Its capture by Colonel Baum's detachment would have enabled General Burgoyne to rewrite the entire history of his ill-starred expedition. Referring again to Ticonderoga and its bloodless capture, there may exist honest doubts as to what honors may have been due to Benedict Arnold, but there was none as to Ethan Allen and Seth Warner. Supported by Warner and his "Green Mountain Boys," Ethan Allen entered the fortress at the head of the command,—"side by side" with Arnold, as he wrote, 11 May 1775,—and the demand for surrender, "In the name of the Great Jehovah, and the Continental Congress," twice repeated, was made by Allen upon Commandant Delaplace. Arnold's commission to command these troops had been repudiated. The next day Warner reduced Crown Point. Making peace among themselves, Arnold and Allen swept Lake Champlain of hostile craft, troops from Connecticut occupied the forts at Crown Point and Ticonderoga, and American patriots thus obtained, within a week, control of the entire waterway. These events, so quickly following Lexington battle, filled royal governmental circles with astonishment. Governor Colden, of New York (who had temporarily returned to power), reported to the British ministry: "The only people of this province who had any hand in this expedition were that lawless people of whom your lordship has heard much under the name of the Bennington mob," referring to the affair of "Breckenridge farm." The "Green Mountain Boys" disbanded and Warner was given the command of a regiment,—composed largely, however, of the same men,—enlisted under the Continental Congress. An "irony of fate" attended its fortunes in that the regiment was mainly engaged in the defense of New York; and yet it should be stated that the State of Vermont, after its organization, paid the entire expenses of these soldiers. Not being recognized as a commonwealth by Congress, the independent State not only defended itself from the British, but materially assisted the general cause of national independence.

A "fast" had been observed 18 June 1777; but disaster following disaster to America, still accompanied the British progress south. Ticonderoga and Crown Point, considered hitherto as commanding Lake Champlain, had fallen, but at Bennington the tide of battle turned. Here the combined forces of Massachusetts (Berkshire County), New Hampshire and Vermont, under Gen. John Stark, won the day; and it was Warner's regiment fresh from its defeats at the north, and Hubbardton in particular, which arrived just in time to save the field. Stillwater 19 September and 7 October, subsequently, led up to Burgoyne's surrender at Saratoga 17 Oct. 1777. This series of successes, one of Cressey's 15 pivotal points of history, was thus written in favor of liberty.

A plain gray obelisk of limestone marks the site of the Continental storehouse, and commemorates the Battle of Bennington, the field of which forms a portion of the landscape visible from its look-out room. It rises from an elevation 250 feet above the Walloomsac River Valley, 301 feet 10.5 inches; base, 37 by 37 feet,—the most imposing strictly battle monument in existence. The cost, $100,000, was contributed by the three States involved in the engagement,

by subscription, and $40,000 by the national government; erected 1887–91 A.D., by the Bennington Battle Monument Association, a Vermont corporation. In the valley is located the Soldiers' Home of the State.

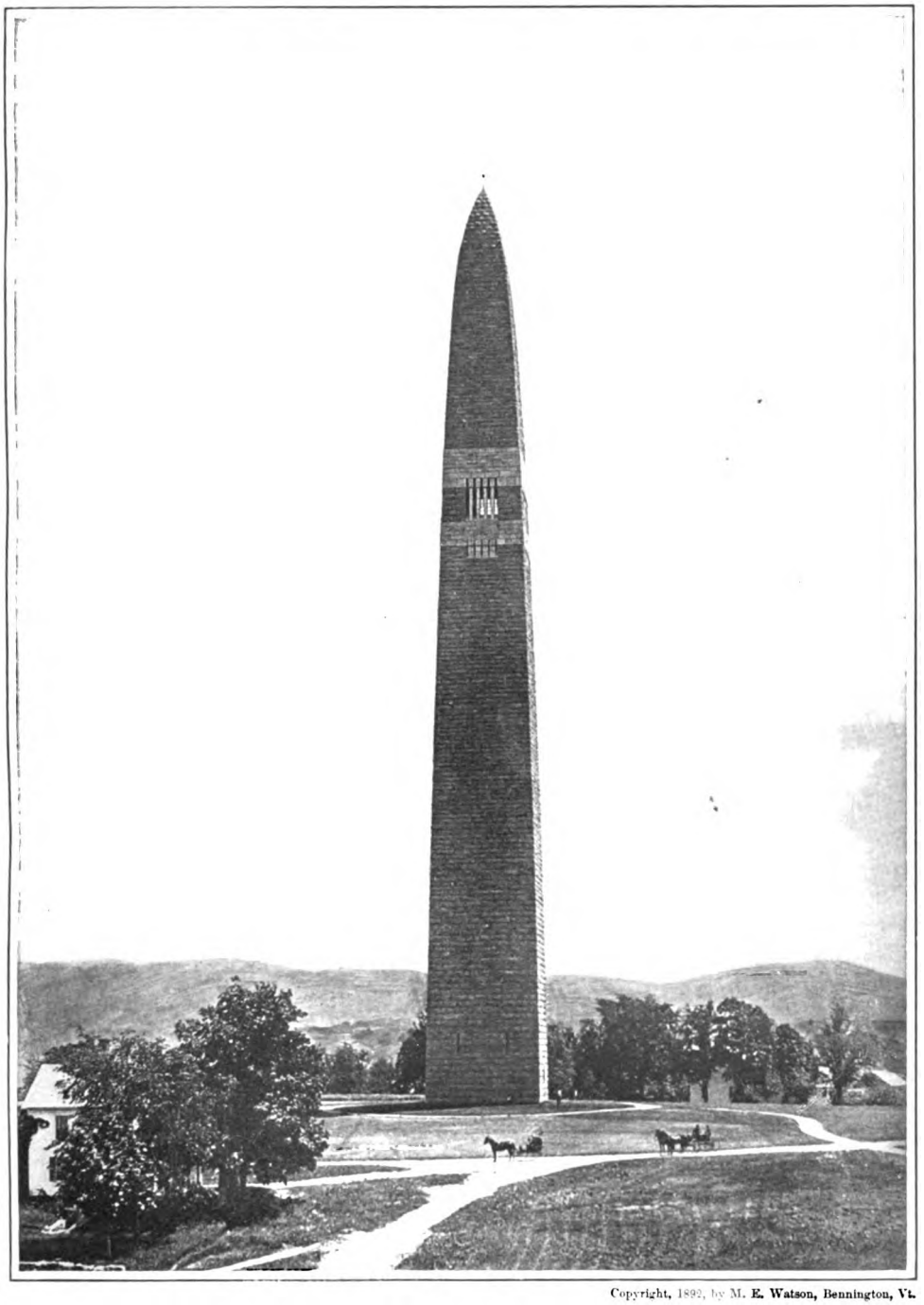
The convention at Windsor, before adjournment, created a "Council of Safety" and endowed it with all the powers vested in the constitution just adopted. It was the acting executive of Vermont during the Battle of Bennington. This council of 12 men was constituted by Thomas Chittenden, president; Jonas Fay, vice-president; Ira Allen (to 6 Sept. 1777), Joseph Fay (from that date to 12 March 1778), secretaries; Heman Allen, Jacob Bayley, Timothy Brownson, Benjamin Carpenter (succeeding 24 Dec. 1777 Benjamin Spencer, a Tory), Jeremiah and Nathan Clark, Moses Robinson, Paul Spooner. This provisional body was dissolved 12 March 1778 when the regular State government was inaugurated. Four days later the first legislature divided the State into two counties, Bennington on the west and Unity on the east, the Green Mountains becoming the line of official demarcation. On the 21st the name "Unity" was changed to Cumberland, and that county was divided into two "shires" by the "ancient line," — the Westminster shire and the Newbury shire. Bennington County also was given two shires,— Bennington and Rutland. A readjustment of county and town lines, thus begun, was continued until permanently established.

The Haldimand Incident.— This was a feature of the American Revolution that has received various interpretations. Its ostensible purpose was an exchange of prisoners, Vermont becoming the *via media* between the commanders of the hostile armies. Its effect was to keep a powerful British army inactive,— for more than four years,— in Canada on the north, and to wring from the Continental Congress a quasi-recognition of the independent commonwealth. Eight Vermonters only were in the secret motives, namely: Ethan Allen (lately returned from his sojourn in a British prison), Ira Allen, Governor Chittenden, Moses Robinson, Samuel Safford, Timothy Brownson, John Fassett and Joseph Fay. Ira Allen, the diplomat, was the moving force, Governor Chittenden became the trusted counsellor of both parties, and Ethan Allen's boldness maintained *in statu quo* the severe criticisms, suspicions and charges of double dealings throughout the period extending from 11 Jan. 1779 to 25 March 1783. To Great Britain was held out the hope that Vermont would become an English province, but the Americans were more difficult of management. Congress had gratefully acknowledged the service of Vermont during the Burgoyne invasion only to recede, and Ethan Allen promptly disbanded the Green Mountain militia, carrying consternation into the settlements exposed on the northern frontier, and perplexity to the commanders of the patriot army. The threatened dissolution and partition of Vermont among the States of Massachusetts, New Hampshire and New York was met by the annexation 5 April 1781 of 35 towns in New Hampshire, extending eastward to the "ancient Mason line"; and 15 June, following, of 12 contiguous districts in New York, formerly claimed by New Hampshire, known as the "East and West Unions." These boundaries were insisted upon by Ethan Allen and accorded by the British. The towns annexed promptly sent representatives to the Vermont legislature and the independence of the enlarged State was unquestionably maintained. The militia was again mobilized, it being significant that the first offer of protection was made by Ethan Allen to New York, and Congress was perfectly well satisfied to enjoy whatever advantages thus inhered to the patriot cause.

Encouraged to believe that Congress would recognize Vermont if the "East and West Unions" were surrendered, on 22 Feb. 1782, in the face of protests by the towns affected, the legislature reduced the State's boundaries to the present limits; but the national body postponed action.

Admission to the Union.—After 14 years of existence as an independent republic of a very democratic kind, Vermont was at last on 14 March 1791 received into the Union as the 14th State. Although fully carrying its part in the recent war, paying its troops and paying New York $30,000 to settle its claims, the State had no debt and this policy of solvency has always been followed during the years since. Ira Allen is credited with the construction of this financial policy. At first the property of Royalists was confiscated and much of the income of the State was thus raised and later a system of taxation was adopted. For a long time after its admission to the Union the constitution accepted at the Windsor Convention of 1777 was retained, and many of its important features remain as greatly cherished as in the former days. No one need be surprised that Vermont has been a State which in proportion to its wealth and population has always exercised a far greater influence in national affairs than could have been expected, if he recall the early history and understands what sort of people settled the wilderness which has become Vermont and the experiences through which they passed in the latter part of the 18th and early part of the 19th centuries.

The settlers of Vermont had been of New England origin and largely from Connecticut. Their ideas of freedom, crystallized in the "Bill of Rights," had been the expression of principles founded upon sincere convictions; they had struggled to attain statehood through sacrifices that were heroic because these affected the dearest spot to freemen — the home. The constitution partook of several unique elements, chief of which was that human slavery should never be legal and it was not strange immigration of the right sort poured into the State and its territory rapidly opened up to settlement. The financial situation was attractive to men of means and the commonwealth grew apace in all that tended to influence and the sterling worth for which Vermont has ever been noted. This accounts for its political "one-sidedness"— after the two types of citizenship, indigenous to all civilized peoples, have crystallized into two opposing camps or parties — and the commanding position the State has taken in national affairs. The isolation forced upon the people by their early struggles accounts for the insularity of the earlier trade relations, these being with Canada, principally, rather than with the United States. The War of 1812, however, changed this feature, presenting another opportunity for Vermonters to show their mettle. With the north-



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THE BENNINGTON BATTLE MONUMENT

ern frontier again threatened by the British, the courage, patriotism and military acumen of the fathers — many of whom were alive — induced a prompt response to the call of the national government for help. As in the Revolution, so in the Second War with Great Britain, the Vermont troops were in evidence; and, at the Battle of Plattsburgh, 11 Sept. 1814, where Macdonough commanding 14 vessels of 2,244 tons, 882 men, 86 guns, defeated the British Captain Downie, whose fleet consisted of 16 vessels, 2,404 tons, 987 men, 92 guns, it was the Vermont volunteers who silenced the shore batteries at the crucial time, and made the victory possible, again stripping the waters of Lake Champlain bare of English vessels of war. This was the last important engagement in the Northern Department and the result was joyously celebrated throughout the United States. Four months later peace was concluded. Official rolls, although imperfect, credit Vermont with: "Soldiers who served 1812–14, 4,170; Plattsburgh (Vt.) volunteers, 4,620." Vermont furnished one company of 84 men for the Mexican War, 1845–48. At the storming of Chapultepec, 12–14 Sept. 1847, two of these soldiers were the first to reach and lower the Mexican flag on the bishop's palace. The Civil War, 1861–65, found Vermont with a nominal brigade composed of four militia regiments, of less men than the law required, armed with obsolete equipment; not enough superannuated stuff to fit out one regiment. At the first call by President Lincoln for 75,000 volunteers, the legislature was called in emergent session, the national proclamation and State warning bearing even date, 15 April 1861. On 25 April the general assembly convened, and, in one day, appropriated $1,000,000 for war expenses; during the session of 42 hours, voted also $7 per month to pay Vermont soldiers in addition to the $13 per month allowed by the general government; laid a war tax of 10 cents on the "grand list dollar"; provided for the equipment of six more regiments for a term of two years, afterward extending the period of enlistment to three years; and adjourned, after providing that the existing first regiment be recruited to its full quota. This regiment was mustered 8 May 1861 and two days later went to the front. Before the 11th of May volunteers for five regiments had offered their services, where only two were needed, thus emulating the patriotic ardor of Revolutionary days. The precedent for the $7 per month in 1861 was established by the governor and council 21 June 1794 when an extra allowance was voted to the "minute men" — Vermont's quota of 2,139 — under a call of the United States 19 May, ultimo.

In 1861 the number of Vermonters subject to military duty was 60,719. At the close of hostilities Vermont was credited by the War Department with 35,242 men, an excess of its quota of 1,513. One in 10 of the total population and more than one-half of those subject to military service had fought for the Union. The State sent out 17 regiments of infantry; three batteries, one regiment of cavalry and three companies of sharpshooters. The First regiment were three months' men; from the Second to the 11th (the last heavy artillery), inclusive, three years' enlistments; the other six were nine months' troops. The First Vermont Brigade consisted of the Second, Third, Fourth, Fifth and Sixth regiments; the Second brigade, of the 12th, 13th, 14th, 15th and 16th regiments. Vermonters enrolled in the regular army and navy are believed to have been in excess of 2,000; in the marine corps, 619; enlisted in Vermont organizations, 28,967; re-enlistments, 1,961; commissioned officers in the navy, 84; in the marine corps, 3. Vermont appropriated for war purposes, $9,887,353 on a total valuation of $85,000,000, of which $5,215,787 was paid by towns. In the Spanish-American War (1898) Vermont promptly responded, but its troops were not called into action. Admirals George Dewey and Chas. E. Clark were the notable Vermont figures of that contest. When trouble with Mexico broke out in 1916 the First Regiment of the Vermont National Guard immediately mobilized and was one of the first to reach the border where it remained until ordered home the end of September. It was officially reported as "The best National Guard' Regiment in equipment and general efficiency" on the border. In July 1917 the same regiment, though with somewhat changed personnel, was drafted into the Federal service and thereby ceased to be of the National Guard. At this time the regiment mustered 55 officers and over 2,000 men and soon became the 157th Pioneer Infantry in the famous 26th or Yankee Division. Under Gen. C. R. Edwards the regiment won the highest commendation for its fighting qualities and general morale. It is needless to add that many other Vermonters were in other parts of the army and had active duty abroad in United States, English and French regiments.

Population.— The percentage of increase in Vermont's population has been quite insignificant since 1850. The surplus of "brain and brawn" has been contributed, with the Civil War exception, to develop the West, and the cities of contiguous States. The younger generations have, since 1837, gone out to improve the country at large; so much so that, in 1890, there were more than 1,000 farms virtually abandoned; others were indifferently cultivated, and, others still, grown up again to primeval forest. Associations of "Native Vermonters" exist in all the larger cities of the East and West; and the annual meetings are notable both for their distinguished personnel and the loyalty expressed for the childhood's home amid the Green Mountains. A small percentage return to occupy the paternal acres; quite large estates are held as summer residences and another transition stage is now in progress which bids fair to upbuild the Commonwealth and still further augment the financial statements of its later history. As to density the State as a whole is not thickly settled, the average population being 39 in each square mile. The proportion of males and females is nearly equal, but the former are about 5 per cent less numerous in both native and foreign population. During the last 25 years there has been a slow, but continuous decrease in the population of the smaller towns and an increase in that of the larger towns. Because of this the population of several counties is less than 50 years ago, though, as has been seen, the State as a whole has slowly increased in number of inhabitants.

The population 18 June 1761 was 22—the families of six actual settlers and landowners

in Bennington. The temporary population of Fort Dummer (late in Massachusetts) had not been preserved. These pioneers had been increased, in 1791, to 43,970 on the east side and 41,569 on the west side. In 1800 the population was 154,465; (1810) 217,895; (1820) 235,981; (1830) 280,652; (1840) 291,948; (1850) 314,120; (1860) 315,098; (1870) 330,551; (1880) 332,286; (1890) 332,422; (1900) 343,641; (1910) 355,956; (1915 est.) 362,452.

GOVERNORS OF VERMONT

BEFORE ADMISSION TO THE UNION

Thomas Chittenden		1778–1789
Moses Robinson		1789–1790
Thomas Chittenden		1790–1791

AFTER ADMISSION TO THE UNION

Thomas Chittenden (d., August 1797)		1791–1797
Paul Brigham, Acting Governor, August 1797–October 1797		
Isaac Tichenor	Federalist	1797–1807
Israel Smith	Democrat-Republican	1807–1808
Isaac Tichenor	Federalist	1808–1809
Jonas Galusha	Democrat-Republican	1809–1813
Martin Chittenden	" "	1813–1815
Jonas Galusha	" "	1815–1820
Richard Skinner	" "	1820–1823
Cornelius P. Van Ness	" "	1823–1826
Ezra Butler	Adams Republican	1826–1828
Samuel C. Crafts	" "	1828–1831
William A. Palmer	Fusion	1831–1835
Silas H. Jennison	Whig	1835–1841
Charles Paine	"	1841–1843
John Mattocks	"	1843–1844
William Slade	"	1844–1846
Horace Eaton	"	1846–1848
Carlos Coolidge	"	1848–1850
Charles K. Williams	"	1850–1852
Erastus Fairbanks	"	1852–1853
John S. Robinson	"	1853–1854
Stephen Royce	Republican	1854–1856
Ryland Fletcher	"	1856–1858
Hiland Hall	"	1858–1860
Erastus Fairbanks	"	1860–1861
Frederick Holbrook	"	1861–1863
John Gregory Smith	"	1863–1865
Paul Dillingham	"	1865–1867
John B. Page	"	1867–1869
Peter T. Washburn	" (Died in office)	1869–1870
George W. Hendee	Acting Governor (Lieut. Governor)	1870
John W. Stewart	Republican	1870–1872
Julius Converse	"	1872–1874
Ashael Peck	"	1874–1876
Horace Fairbanks	"	1876–1878
Redfield Proctor	"	1878–1880
Roswell Farnham	"	1880–1882
John I. Barstow	"	1882–1884
Samuel E. Pingree	"	1884–1886
Ebenezer J. Ormsbee	"	1886–1888
William P. Dillingham	"	1888–1890
Carroll S. Page	"	1890–1892
Levi K. Fuller	"	1892–1894
Urban A. Woodbury	"	1894–1896
Josiah Grout	"	1896–1898
Edward C. Smith	"	1898–1900
William W. Stickney	"	1900–1902
John G. McCullough	"	1902–1904
Charles J. Bell	"	1904–1906
Fletcher D. Proctor	"	1906–1908
George H. Prouty	"	1908–1910
John A. Mead	"	1910–1912
Allen M. Fletcher	"	1912–1915
Charles W. Gates	"	1915–1917
Horace F. Graham	"	1917–1919
Percival W. Clement	"	1919–1921

Foreign Immigration.— For many years after the founding of Vermont it was almost entirely settled by native New Englanders, but there were always French Canadians and a few of more distant origin. As everywhere in the United States, with the coming of various industries and the general influx of foreigners into the country, the foreign portion of the population increased and now, 1919, not less than 35 per cent of the inhabitants are either wholly foreign or of foreign parentage. Welsh have come to the slate quarries, Italians to the marble and granite mills and quarries, Swedes to the marble works and Scotch to the granite works, and other nationalities to other industries, so that more than twenty nations are represented in the State. Of these people 14 per cent are foreign born, 24 per cent of foreign parents. Naturally, by far the greatest number of immigrants have come over the border from Canada, nearly 15,000 being French Canadians and 11,400 English Canadians. Of the other nationalities represented by over 1,000 are 5,000 Irish, 4,500 Italians, and less number of English, Swedes, Austrians, Russians, etc. There are only about 1,600 negroes in the State.

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GEORGE H. PERKINS,
The University of Vermont.

VERMONT, University of, and State Agricultural College, located at Burlington, Vt. The University of Vermont was chartered in 1791, and first opened to students in 1800, the first class being graduated in 1804. The State made a grant of land of 29,000 acres for the use of the university, and the governor of the State and speaker of the house were made members ex officio of the board of trustees. In 1862 the Vermont Agricultural College was chartered, but as it did not receive the support necessary to put it into operation, it was incorporated in 1865 with the university under the title of the University of Vermont and State Agricultural College. Under this new charter the board of trustees consists of the governor,

the president of the university, members ex officio; nine members elected by the State legislature, three every two years, for a term of six years, and nine other members having the power to fill vacancies in their number. The College of Medicine, which prior to 1899 was a partially independent affiliated school, is one of the oldest medical schools in the United States, having been opened to students as early as 1809. It was suspended from 1836 to 1854, but after the latter date its growth was continuous, and in 1899 it became an integral part of the university under the entire control of the board of trustees. The university has maintained a steady growth from the first, except during the War of 1812 and the Civil War. In 1814–15 the college buildings were used as barracks, and all exercises were suspended; in the Civil War large numbers of students left the university to join the army. The organization of the university now includes: (1) the College of Arts and Science; (2) the College of Medicine; (3) the College of Engineering; (4) the College of Agriculture. Women are admitted to all colleges except medicine. The College of Arts offers a classical course leading to the degree of A.B., a literary-scientific course leading to the degree of Ph.B., a course in general science leading to the degree of B.S., a technical course in chemistry leading to the degree of B.S. in chemistry and a course in commerce and economics, leading to the degree of B.S. in commerce and economics. The A.B. and Ph.B. and general B.S. courses are largely elective after the freshman year. The College of Engineering offers courses in civil and sanitary, electrical and mechanical engineering, all leading to the degree of B.S. In the College of Agriculture courses in animal and plant industry, teaching of agriculture and home economics are offered. Shorter courses of one or two years are also provided in agriculture. The College of Medicine offers a four years' course leading to the degree of M.D.. Two years of preliminary work are required for admission to the medical college. The university also offers a seven-year combination of medical and academic curricula leading to the Baccalaureate and M.D. degrees. The university also confers the degrees of A.M., M.S., C.E., M.E. and E.E. for graduate work. There are 56 endowed scholarships, 30 State scholarships and a students' loan fund. The university buildings on the campus include Old College, a reconstruction of a building erected in 1825, the cornerstone of whose southern part was laid by General Lafayette; Converse Hall, a dormitory; Grassmount, woman's dormitory; the Billings Library; the Williams Science Hall; the mechanical buildings; the agricultural buildings; and the gymnasium; the medical department occupies buildings in the city. The library in 1918 contained 97,000 volumes. In 1904, in which year the centennial of the first graduation was celebrated, a movement was begun by the alumni to raise a centennial endowment fund of $1,000,000. The students in 1918 numbered 599, of whom 313 were in the departments of arts and sciences. Among the graduates have been one vice-president of the United States, one cabinet minister, three United States ministers to foreign nations, four governors of Vermont and 14 college presidents.

VERNE, Jules, French novelist: b. Nantes, 8 Feb. 1828; d. Amiens, 24 March 1905. His early education was obtained in the Nantes Lycéa; he then studied law in Paris, but early turned his attention to literary work, at first writing short pieces for the stage, and in 1863 attracted attention by a story, 'Cinq Semaines en Ballon,' or 'Five Weeks in a Balloon,' which instantly met with popular approval. He inaugurated a new school in fiction, basing his stories on the inventions of the day, delineating wildly extravagant voyages and adventures to which he added very cleverly prepared scientific and geographical detail. The interest in his books depends entirely on incident, and though extremely entertaining, his characters are subordinate and merely inserted to sustain the narrative. Among his books, all of which were translated into several languages, are 'Le Désert de Glace' (1867); 'A Journey to the Centre of the Earth' (1872); 'Twenty Thousand Leagues Under the Sea' (1873); 'Meridiana, The Adventures of Three Englishmen and Three Russians in South Africa' (1873); 'From the Earth to the Moon Direct in Ninety-Seven Hours Twenty Minutes and a Trip Round It' (1873); 'The Fur Country; or Seventy Degrees North Latitude' (1874); 'Around the World in Eighty Days' (1874); 'A Floating City,' and 'The Blockade Runners' (1874); 'The English at the North Pole' (1874); 'Dr. Ox's Experiment' (1874); 'A Winter Amid the Ice' (1875); 'The Mysterious Island' (1875); 'The Survivors of the Chancellor' (1875); 'Michael Strogoff, the Courier of the Czar' (1876); 'The Child of the Cavern' (1877); 'Hector Servadac, or the Career of a Comet' (1877); 'Dick Sands, the Boy Captain' (1878); 'Le Rayon Vert' (1882); 'Kéraban-le-têtu' (1883); 'L'Etoile du Sud' (1884); 'Le Pays de Diamants' (1884); 'Le Chemin de France' (1887); 'Deux Ans de Vacances' (1888); 'Famille Sans Nome' (1889); 'Cæsar Cascabel' (1890); 'Mathias Sandorf' (1890); 'Nord contre Sud' (1890); 'The Purchase of the North Pole' (1890); 'Claudius Bombamac' (1892); 'Le Château des Carpathes' (1892); 'L'Ile à Hélice' (1895); 'Le Sphinx des Glaces' (1897); 'Le Village Aerion' (1898); 'The Master of the World' (1904); and 'A Drama in Livonia' (1905). His comedy 'Les Pailles Rompues' was written in 1848 and produced at the Gymnase in 1850 and his 'Onze Jours de Siège' quickly followed. Several others were dramatized and 'Le Docteur Ox' was changed to an opera. He was made a member of the Legion of Honor and his books were crowned by the French Academy, but to his disappointment his literary worth was more fully recognized abroad than in his own country. See TWENTY THOUSAND LEAGUES UNDER THE SEA.

—VERNER, vĕr'nẽr, Karl Adolf, Danish philologist: b. Aarhus, Jutland, 7 March 1846; d. 1896. He was educated at the University of Copenhagen; from 1876 to 1883 was assistant in the university library at Halle and after 1883 was professor of Slavonic languages at the University of Copenhagen. In 1875 he published in *Kuhus Zeitschrift* an article entitled 'Eine Ausnahme der ersten Lautverschiebung,' which proved of far-reaching importance not only for Teutonic philosophy, but also for the

methods as well as results of Indo-European comparative grammar. In recognition of this service he was awarded by the Berlin Academy the Bopp prize in 1877, and in 1887 made honorary Ph.D. by the University of Heidelberg. He also published brief articles in linguistic journals. See VERNER'S LAW.

VERNER'S LAW, in philology, a law of sound so named from the discoverer, Karl Adolf Verner (q.v.) who formulated it in 1875. It embodies an explanation of certain apparent exceptions to the laws for the first shifting of consonants, affecting the representation in Teutonic of the Indo-European voiceless explosives *k, t, p* and the voiceless sibilant *s*. According to Grimm's Law *p* of the mater-language always equaled English *f*; *t* = *th*; *k* = English *h*; *b* = English *p*; *d* = English *t*; *g* = English *c*(*k*); *bh* = *b*; *dh* = *d*; *gh* = *g*.

Verner pointed out that these laws or rules did not apply to all instances: he saw that *t* = *th* at the begining of a word and under certain conditions (cp. *the father*), but *εκατόν* and centum, from -tóm, gave not hun*th*(red) but hun*d*red. So he said that, at the begining of a word, or when the Mater-Language showed an *Accent* following the *t*, then *t'* = *d*, not *th:* cp. *θετά* and dee*d*. Greek shows this Early Accent very clearly. In order to remember Grimm's Law and Verner's Law, it is best to start with *instances,* which can be collected in a Hexameter: under each word write the Greek word, then the Mater-Language consonants, then the English word with the consonant in capitals or thick type. The Laws can easily be gathered from the instances, and can then be applied to other instances. *Latin:* turba pedes in agris centum fert facta et in hortis. *Greek: τύρβη πόδας (ἐν) ἀγροῖς (ἑ) κατόν (ἑ) φερε (τ) θετά ἐτι(ἐν) χόροις.* English: THorp FeeT (in) aCres HunD(red) BeareTH DeeD GarTH (O.E).

To sum up Grimm's Law and Verner's Law for English:

1. The Hard Consonants or 'Tenues' of the Mater-Language = Aspirates, etc., in English —

q and *k* (Guttural) = *h*
t (Dental) = *th* [t' = d)
p (Labial) = *f*

2. The Soft Consonants or 'Mediæ' = Hard:

I and *g* = *c* (*k*)
d = *t*
b (rare) = *p*

3. The Aspirated Consonants = Soft:

I*h* and *gh* = *g*
dh = *d*
bh = *b*

From the above it is seen that Verner's Law is a modification and extension of Grimm's Law; its essential point consisting in the recognition that the diversity was connected with the original word-accent of Indo-European. Consult Brugmann, K., 'Comparative Grammar of the Indo-Germanic Languages'; Skeat, W W., 'Principles of English Ethnology' (1887); King and Cookson, 'Sounds and Inflexions.'

VERNET, vĕr-nā', **Antoine Charles Horace,** known as "CARLE VERNET," French painter: b. Bordeaux, 14 Aug. 1758; d. Paris, 17 Nov. 1835. He was the son of Joseph Vernet and distinguished as a painter of the Napoleonic battles, who ever aimed at the glorification of the victor of Friedland and Fontenoy. He also painted portraits and hunting scenes. His comic pictures are interesting and valuable as records of contemporaneous manners.

VERNET, Claude Joseph, French painter: b. Avingon, 14 Aug. 1714; d. Paris, 3 Dec. 1789. Going to Rome in 1734, he received his art-training from A. Manglard and returned to France (1753) to become member of the Academy and to paint for Louis XV a series of views of French seaports (now in the Louvre). His landscapes and marines are well set-off with figures. He evidently imitated the manner of Claude Lorraine, but his pictures are finished with a certain conventional monotone which detracts from their reality.

VERNET, Jean Emile Horace, commonly called "HORACE VERNET." French painter: b. Paris, 30 June 1789; d. there, 17 Jan. 1863. He was the grandson of Claude Joseph Vernet (q.v.), and son of Antoine Charles Horace Vernet, better known as Carle Vernet (q.v.). His first master in art was his father and even at 13 he could support himself by the payments received for his drawings. He studied also under designer Moreau, the architect Chalgrin, and the painter Vincent. His 'Capture of a Redoubt' (1709) took the public by storm; it was a new departure from the frigid classicalism of David and was alive with modern feeling and realistic life. On the hopes kindled by this success he married, opened a studio, and established a manner of his own. He became the first representative in art of the Napoleonic war spirit with all its swagger and chauvinism, and offended the government of the Restoration by his anti-monarchical caricatures, so that in 1822 his works were excluded from the exhibition; this induced him to open a picture-gallery of his own which was very successful. His increasing popularity at last induced Charles X to appoint him to the directorship of the French Academy in Rome, a post which he ably filled till the end of 1834. On his return to Paris, Louis Philippe commissioned him to paint the historical galleries of the museum of Versailles, a task which occupied him five years. Among the most remarkable of the pictures are 'The Occupation of Ancona'; 'The Assault of the Town of Constantine in Africa'; 'The Attack of the Citadel of Antwerp'; 'The Fleet Forcing the Tagus'; 'The Dog of the Regiment'; 'The Soldier of Waterloo'; 'The Battles of Jemappes'; 'Montmirail'; 'Fontenoy'; 'Wagram'; 'The Capture of La-Smala'; 'The Prayer in the Desert'; 'The Council of Arabs.' His last great picture was 'The Battle of the Alma.' Consult Rees, 'Vernet et Delaroche' (1880); and Dayot, A., 'Les Vernet' (1898).

VERNIER, vĕr-nĕ-ā', **Pierre,** French mathematician: b. Ornans (Doubs), 1580; d. Ornans, 14 Sept. 1637. He was captain commanding the chateau d'Ornans, counsellor of the king of Spain, director-general of the mint for the Franche-Comté. He devoted his leisure to mathematics, and is known as the inventor of the vernier (q.v.), which was formerly attributed to Nunez. He described this instrument in 'La construction, l'usage et des propriétés

du quadrant nouveau de mathematiques' (Brussels 1631). He also wrote a manuscript 'Traité d'artillerie.'

VERNIER, a device for reading scales, invented by Pierre Vernier (q.v.). It consists of an auxiliary scale of n intervals sliding in contact with the scale to be read, and occupying therein a space of $n \pm 1$ intervals. Each interval of the vernier scale will then occupy $1 \pm \frac{1}{n}$ intervals on the main scale. Let us assume that the main scale reads from right to left, and the vernier scale from left to right, and that 10 intervals in the vernier scale occupy the place of 11 intervals on the main scale. Let the 0 of the vernier scale be 12.8 intervals to the left of the 0 of the main scale. It will then be situated between 12 and 13 of the main scale. The one of the vernier scale will be at 12.8 — 1.1 on the main scale, the two at 12.8—2.2, and finally the 8 at 12.8—8.8 = 4 on the main scale. That is, the figure 8 on the vernier will coincide with a graduation on the main scale. We thus see how to read to tenths of an interval: the integral part of the number of units by which the 0's of the two scales differ is read in the usual manner from the main scale, while the number of tenths is read by determining which index on the vernier scale most nearly coincides with an index on the main scale. This type of vernier is known as the retrograde or reverse vernier. In the direct vernier, vernier and main scale read in the same direction, and the vernier intervals are $1 - \frac{1}{n}$ intervals on the main scale. If the distance between the 0's is $a + \frac{b}{n}$ the distance between the 0 of the main scale and c on the vernier scale is $a + \frac{b}{n} + c\left(1 - \frac{1}{n}\right) = a + c + \frac{b - c}{n}$. When $b = c$, this is integral, and the reading b on the vernier scale coincides with a reading on the main scale. Verniers are used for reading distances and angles, and the principle has been applied to a form of chronosocope used in psychological experiments concerning the reaction-time. Here the main scale is represented by a pendulum making n oscillations per minute, the vernier by a pendulum making $n + 1$ oscillations per minute, and the interval between the times at which the two pendulums are released is measured by the number of oscillations it takes for them to swing in unison. See DIAGONAL SCALE; PSYCHOLOGICAL APPARATUS. Consult Ludlow, 'Subscales, Including Verniers' (Von Nostrand's *Engineering Magazine,* New York 1882).

VERNON, vėr'nŏn, **Edward,** English naval officer: b. Westminster, England, 12 Nov. 1684; d. Nacton, Suffolk, 30 Oct. 1757. He was educated at Westminster and Oxford and in 1700 entered the royal navy. In 1702 he was promoted lieutenant, and in 1704 was engaged under Sir George Rooke at Malaga, continuing in the navy until 1721, when he retired on half-pay. In 1722 he was returned to Parliament for Penryn, but in 1726 he assumed command of the *Grafton* in the Baltic fleet, and later joined the forces at Gibraltar. He returned to England on the conclusion of peace with Spain in 1728, and resumed his seat in Parliament. He vehemently insisted in the House on the weakness of the Spanish colonies, and upon declaring that he could take Porto Bello, on the Isthmus of Panama, with six ships, he was in 1739 appointed vice-admiral and given command of the West Indian expedition. He succeeded in capturing Porto Bello in November of that year, but his attack upon Cartagena in 1741 was unsuccessful. In 1742 he returned to England, and having in his absence been elected to Parliament for both Penryn and Ipswich, he chose to sit for the latter. He was promoted admiral in 1745, but in 1746 was removed from his office by reason of a quarrel with the admiralty. He continued to sit in Parliament until his death. His second attack off Cartagena is introduced in Smollet's novel 'Roderick Random,' the author, together with Laurence Washington (brother of George), having participated in the expedition. The latter named his estate in honor of the admiral «Mount Vernon.» Vernon wrote 'A New History of Jamaica' (1740); 'Original Papers Relating to the Expedition of Panama' (1744), etc.

VERNON, George John Warren, 5TH BARON, English scholar and philanthropist: b. Stapleford, Nottinghamshire, 22 June 1803; d. near Derby, England, 31 May 1866. He was one of the wealthiest men in England, and devoted his life to the service of letters, philanthropy and reform. He entered public life in 1831 as member of Parliament for Derby and was an active supporter of the Reform Bill. In 1835 he succeeded to the title of his father and his seat in the House of Lords, honors which hampered in some degree his political career, though he remained liberal in sentiment and a progressive and public spirited citizen to the last. His labors as a philanthropist during the cotton famine in Lancashire in 1862-63 made him much beloved, his generosity and personal exertions doing much to alleviate the widespread distress of that period.

VERNON-HARCOURT, Leveson Francis, English civil engineer: b. London, 25 Jan. 1839. He was educated at Oxford, and studied under Sir John Hawkshaw in 1862-65, later becoming his assistant. He engaged in engineering on various waterworks and railways, went to London in 1875, where he established himself as a hydraulic engineer, and is generally recognized as an expert in his profession. He visited India in 1896 to make an inspection of the river Húgli, was British member of the jury for civil engineering at the Paris exposition in 1900, and since 1882 has occupied the chair of civil engineering at University College, London. He has published 'Rivers and Canals' (1882); 'Achievements in Engineering' (1891); 'Civil Engineering as Applied in Construction' (1902).

VERNON, Conn., town in Tolland County, on the New York, New Haven and Hartford Railroad, about 12 miles east by north of Hartford. There are three villages and one city included in the town. It is in an agricultural region, and has considerable manufacturing interests, producing annually about $7,000,000 worth of goods. The chief manufactures are silk, cotton and woolen goods. The dairy and

farm products shipped from the town are quite extensive. Pop. about 9,087.

VERONA, vā-rō'nä, Northern Italy, (1) A city, capital of the province of the same name, 68 miles west of Venice, beautifully situated on the Adige River where the last slopes of the Alps merge into the plains of Lombardy, on both sides of the Adige, which traverses the city in a wild and rapid torrent, and is crossed here by six bridges. The town is surrounded by lofty walls flanked with towers and bastions, and is entered by five gates remarkable alike for solidity and beauty. Many of the streets, though narrow and crooked, are lined by splendid mansions, particularly rich in marble decorations, and there are several elegant squares. New embankments and buildings along the Adige, numerous industrial establishments, electric lighting, and street railroads are modern features. Among the more interesting buildings is the Roman amphitheatre, occupying one side of the Piazza-Brà; it is supposed to have been built in the 2d or 3d century A.D. The interior is nearly perfect; it is in the form of an ellipse, the transverse axis of which is 510 feet, and the conjugate 410 feet; it is 106 feet high, and on the 45 tiers of steps 27,000 spectators could be accommodated. There are about 50 churches, many of them magnificent specimens of Gothic architecture, rich in paintings and other art treasures. The cathedral is an imposing Gothic structure of the 14th century with a choir and Romanesque façade of the 12th; the church of Saint Zeno is a Romanesque basilica of noble proportions, with some interesting old statues and reliefs; those of Saint Anastasia, Saint Giorgio and Saint Fermo Maggiore, should also be mentioned. The Palazzo del Consiglio, in the Piazza dei Signori, dates from the beginning of the 16th century; it is adorned with statues of celebrated natives of the town, among whom are Cornelius Nepos, Catullus, Pliny the Younger and Vitruvius. Close by are the imposing Gothic tombs of the Della Scala family (known also as the Scaligeri), who for upward of a century (1262–1389) were the lords of Verona. There are several theatres, a museum with a valuable collection of antiquities, a public library, hospitals and numerous literary and artistic institutions. The town carries on manufactures of silks, woolens, hats, etc., and has an important trade. Verona is supposed to have been founded in the 4th, and to have been subjected to the Romans in the 2d century B.C. On the decline of the Roman Empire it was taken by the Goths, and made by Theodoric the capital of his empire. In 774 it was captured by Charlemagne, and took a lead among the Italian cities while the power of the emperors in Italy lasted. It afterward became an independent republic, but suffered much from the dissensions of its nobles, a state of affairs depicted by Shakespeare in 'Romeo and Juliet.' Weary of the vicissitudes to which it had been subjected, it voluntarily ceded itself to Venice, under which it remained from 1405 to 1797. It then passed into the hands of the French, afterward into those of the Austrians, under whom it possessed great strategic importance, as it formed a member of the celebrated "Quadrilateral," or four mutually supporting fortresses (Mantua, Verona, Peschiera and Legnago) which secured the Austrian position in northern Italy, and formed the key to the Tyrol from the south. Here in 1822 the Congress of Verona, consisting of European monarchs and diplomats, under the leadership of Metternich, decided upon the suppression of the Spanish revolution by the intervention of the Holy Alliance (q.v.). With the rest of Venetia, Verona was incorporated with Italy in 1866. Communal pop. about 85,000. (2) The province of Verona in the compartimento of Venice has an area of 1,185 square miles. It adjoins Austria on the north, Vicenza and Padua on the east, Ferrara on the south, and Mantua and the Lake of Garda on the west. This section was subject to air raids by the Austrians during the World War. Pop. (1918 est.) 475,000. Consult Allen, M. A., 'History of Verona' (New York 1910).

VERONA, vẹ-rō'nạ, Pa., borough, Allegheny County, on the Allegheny River and the Allegheny Valley Railroad, about 10 miles northeast of Pittsburgh. It has a number of manufacturing establishments, chief of which are railroad repair shops, glass works, foundries, machine shops and powder and dynamite factories. It has a national bank and a newspaper. Pop. about 2,849.

VERONESE, vā-rō-nā'zĕ, **Paul** (his real name was PAOLO CALIARI), Italian painter: b. Verona, 1528; d. Venice, 19 April 1588. He studied under his uncle Antonio Badile, a painter, and copied the style of Carazzola and the Veronese school, as appears from the many altar-pieces and frescoes which he executed at Verona. He went in 1548 to Mantua where he executed frescoes for the cathedral and afterward to Venice. Here he imitated Titian and Tintoretto, but at the same time appeared desirous of surpassing them by a more studied elegance and a richer variety of ornament. It soon became evident from his works that he had studied the ancient statues, and the etchings of Parmesan and Albert Dürer. His first works are frescoes on the ceiling of the sacristy in the Church of Saint Sebastian in Venice, now known to the Italians as "Teator di Gloria," that is, the glory of Veronese. The 'History of Esther,' in fresco, which he afterward painted in this church, excited general admiration. Among other works by him at Venice are 'The Coronation of the Virgin,' altar-piece; the 'Martyrdom of Saint Sebastian'; 'The Feast at Simon's House' (now in the Brera, Milan). It was during this time that he formed his style as a master of the Venetian school. He had already acquired the Veronese spirit of color, with its clear pale tone and soft harmoniousness. He was now under the influence of Titian, but he never surrendered his own individuality so far as to become an imitator. After accompanying the Venetian Ambassador, Grimani, to Rome he saw with enthusiasm the beautiful models of Raphael and Michelangelo, and painted after his return his fine 'Apotheosis of Venice.' His numerous banqueting pieces are also excellent. Six at least of these are found at Venice in the refectories of the monasteries, among the best of which are the 'Marriage at Cana,' comprising 120 figures, many of which are portraits. In this piece the extravagant display of almost Asiatic pomp, and the confusion of different persons and dresses have been justly censured. The air of pride in

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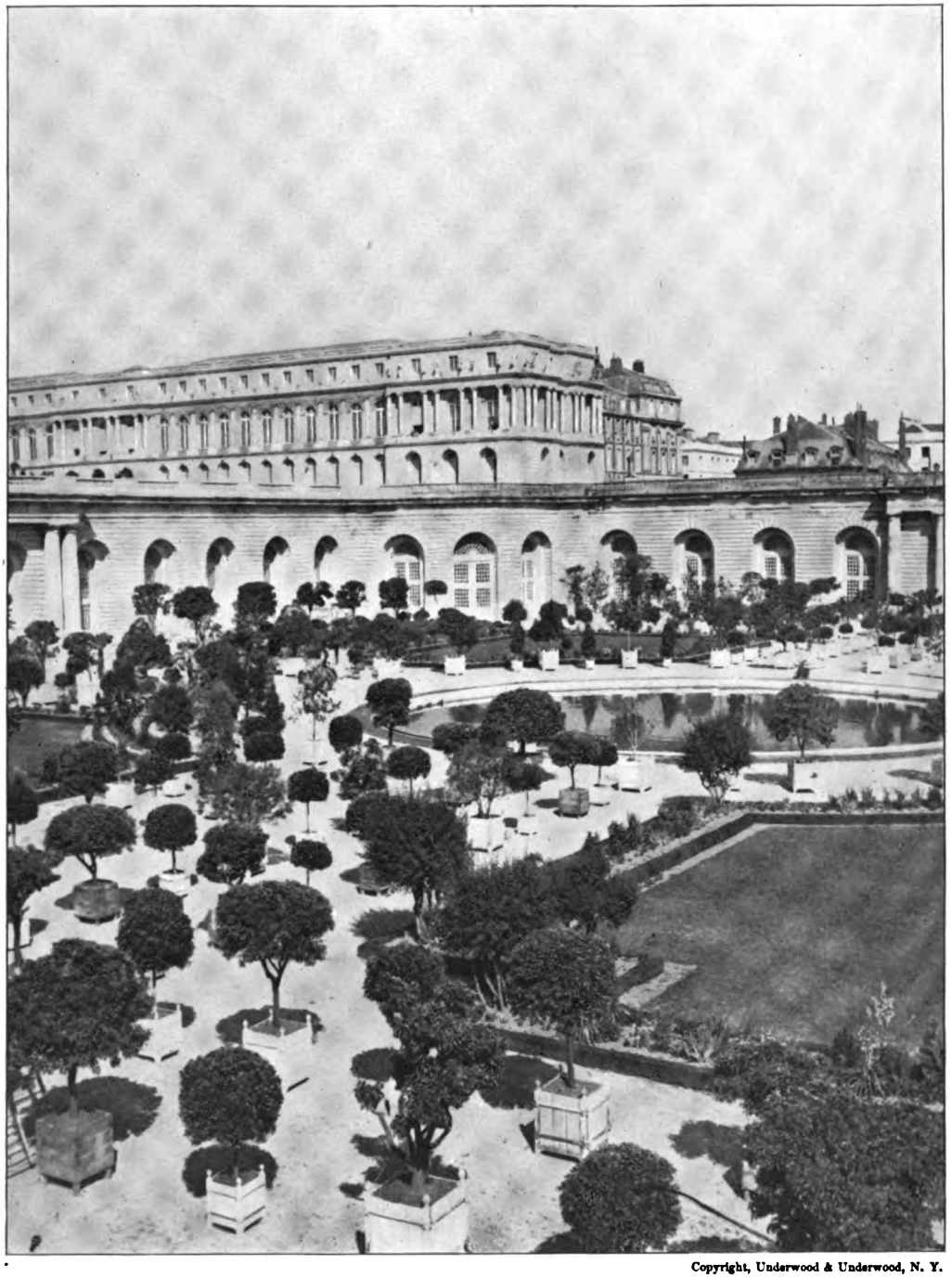
1 The Gallery of Battles

2 Reception Room, Petit Trianon

VERSAILLES



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Corner of the Palace and Gardens. In this Palace the World Peace Conferences were held, 1918–1919

the aspect of Christ instead of a simple expression of dignity, the placing of the principal personage in a corner of the picture and the confused blending of the white tablecloth and the architecture of the background have also been considered blemishes. In his 'Pilgrims of Emmaus' Veronese violated all the unities of time, place and action. But with all these faults he displays talent and fruitfulness of conception. In short, his works are rather to be considered as contributions to decorative effect than either religious paintings or representations of life in the past. They are neither historic nor devotional, but merely magnificent combinations of form and color intended to add life, warmth and variety to vast architectural spaces and to interest the spectator by their expressive faces, their gorgeous costumes and the movement and dramatic action of the scene. Veronese died in 1588. His scholars were Charles and Gabriel, his sons, and Benedetto, his brother, besides Michael Parrasio, Naudi, Maffei, Verona, Francesco Montemezzano. Consult Weiggirer, 'Veronese' (1897).

VERONICA, vĕ-rŏn'ĭ-kạ, **Saint,** a woman who, when Christ was carrying his cross, lent him her veil to wipe the sweat from his face, and on receiving it back found his likeness imprinted on the cloth. This veil is said to be still preserved at Rome, where it is shown to only a few persons of special rank. It is commonly supposed that the Saint Veronica of the legend received this name in mistake, and that it arose from a misunderstanding and corruption of the term *vera icon,* true image, originally applied to the likeness itself. Various ancient witnesses, however, have identified Veronica with different persons mentioned in the Gospels. In the legend of the Clementines Veronica is another form for Vernice, the daughter of the Canaanitish woman who won from Jesus the recovery of her child. According to the 'Acts of Pilatus' and in the writings of Cassiodorus, Reginus, Cedrenus, etc., she was the woman healed by Christ of her issue, who afterward raised to Jesus a statue in bronze at Paneas. Consult Grimm, 'Die Sage von den Christusbildern' (1842), and Thurston, H., 'Stations of the Cross' (London 1906).

VERPLANCK, vĕr-plănk', **Gulian Crommelin,** American Shakespearean scholar and legislator: b. New York, 6 Aug. 1786; d. there, 18 March 1870. He was graduated from Columbia in 1801, admitted to the bar in 1807 and afterward traveled in Europe. In 1820 he was elected to the New York legislature, was professor of the evidences of revealed religion and moral science at the General Protestant Episcopal Seminary, New York, in 1821–25, served in Congress in 1825–33 and was a member of the New York senate in 1838–41. He was a governor of the New York City Hospital in 1823–65; president of the New York Board of Emigration Commissioners in 1846–61, and from 1865 until his death was vice-chancellor of the State University. He edited 'Shakespeare's Plays, with his Life' (3 vols., 1844–47) and wrote 'The Bucktail Bards and the Epistles of Brevet Major Pindar Puff,' political satires directed at De Witt Clinton (1818); 'Evidences of Revealed Religion' (1824); 'Discourses and Addresses' (1833); nearly half of the *Talisman,* an annual conducted jointly with Robert C. Sands and William C. Bryant (3 vols., 1827–30), etc. His most enduring work was that performed in connection with his Shakespearean studies.

VERRALL, vĕr'ạl, **Arthur Woollgar,** English classical scholar: b. Brighton, Sussex, 5 Feb. 1851; d. 1912. He was educated at Wellington College and Cambridge University; was called to the bar in 1877, and from 1874 was a Fellow of Trinity College, Cambridge. He edited 'Euripides' Medea' (1881); edited and translated 'Æschylus' Seven' (1887); 'Agamemnon' (1889, 1903); and wrote 'Studies in Horace' (1883); 'Euripides, the Rationalist' (1895), etc. His 'Collected Literary Essays,' with a memoir by M. A. Bayfield, appeared in 1913.

VERRES, vĕr'ēz, **Gaius,** Roman governor of Sicily: d. 43 B.C. He was the son of a Roman senator and in his earlier career a supporter of the Marian faction which he afterward deserted to join the following of Sulla. He was recompensed for his conduct by a share in the confiscated estates of the defeated party, and was proquæstor to Dobella, prætor of Cilicia in 80–79. He became governor of Sicily in 73, but fairly impoverished the island by his mismanagement. The inhabitants gained the support of Cicero in 71 and Verres was brought to trial, with Cicero as prosecutor and Hortensius as defender. While the trial was still in progress Verres gathered a large share of his wealth together and fled to Massilia, where he lived in luxury for 27 years, when he was put to death by the proscription of Antony, whose greed he had excited.

VERROCCHIO, vĕr-rōk'ē-ō, **Andrea del,** Italian artist: b. Florence, 1435; d. Venice, 1488. He began as a goldsmith; was also a follower of Donatello in the practice of sculpture and eventually devoted himself to painting. He was as skilful in marble as in bronze work, and his sculptures at Florence are distinguished for lifelike expression and strong, truthful individuality. His best works are 'The Boy and the Dolphin,' a group on the fountain in the court of the Palazzo Vecchio; 'Madonna and Child,' a relief; 'David,' a bronze statue; 'Death of the Wife of Francesco Tornabuoni,' in the Bargello; and 'Doubting Thomas.' Going to Venice in 1480 he began the colossal statue of Bartolommeo Colleoni, which was completed by Leopardi. In the Academy at Florence is his 'Baptism of Christ,' in which one of the angels is said to have been painted by Leonardo da Vinci. There are two other pictures, Madonnas, ascribed to him, one of which is in the Museum at Berlin.

VERRUGAS, vĕr-roo'gäs, Peru, a streamlet and ravine in the mountains of central Peru, spanned by a lofty viaduct of the Lima and Oroya Railway. The viaduct, with two piers, is 575 feet long and 252 feet high; it was completed in 1891 and replaced a similar construction with three piers opened in 1873 and destroyed by a flood in 1889.

VERSAILLES, vĕr-sālz' (Fr. vĕr-sä-y), France, capital of the department of Seine-et-Oise, 11 miles southwest of Paris, is a town of royal construction, having risen up rapidly, regularly and with great magnificence under the

directions of the sovereigns of France, particularly Louis XIV, who made it the seat of his court, and lavished immense sums on its embellishment. It is justly regarded as one of the handsomest towns in Europe, and, having many conspicuous objects for attack by airplanes, was extensively camouflaged during the World War. The palace is the most conspicuous edifice, though somewhat monotonous in appearance, the buildings being more than 2,000 feet in length. It was built by Louis XIV, but ceased to be a royal palace at the revolution of 1793, and Louis Philippe converted it into a national museum. It is filled with an immense collection of statues and paintings intended to represent all the principal personages and events connected with French history from Clovis downward. The principal façade bearing the inscription, *A toutes les Gloires de la France* ("To all the Glories of France"), and fronting the gardens and park, is over 400 yards long. A conspicuous feature is the Battle Gallery, 400 feet long, lined with paintings representing French victories. The window spaces are filled with the names and titles of the military heroes of France, with the dates when they gave up their lives for their country, and names of the battles where they fell. The fountains are famed for their beauty; the water to supply them was brought 100 miles. The Orangery was planned in 1685 by Mansart, and is still one of the most delightful features of the grounds, being surrounded by observation galleries. Innumerable statues and vases grace the grass plots and the shrubbery is highly cultured. The palaces of the Grand and Petit Trianon are in the north of the park. There is also in the town a fine hippodrome, military hospital, public library and there are excellent technical and private schools. The industries are unimportant, shoe manufacture and market gardening being the largest. The treaty of peace between the United States and Great Britain was signed at Versailles in 1783. The city was also the German headquarters during the Franco-German War (q.v.) from September to March 1870–71, and here Wilhelm I was declared emperor of Germany. It was also the seat of the French government from the peace until 1879. Therefore it was especially appropriate that Versailles was selected for the peace conference in 1918. The permanent population is about 65,000. Consult the English translation of Nolhac's 'Versailles and the Trianon' (New York 1912).

VERSAILLES, Ky., town, county-seat of Woodford County, on the Louisville and Nashville and the Southern railroads, 14 miles southeast of Frankfort. It is in an agricultural region in which considerable attention is given chiefly to stock-raising. The industries are connected chiefly with the farm products. The educational institutions are Ashland Seminary (Protestant Episcopal), Rose Hill Seminary (Christian), opened in 1875, and public elementary schools. There are three banks. Pop. about 2,100.

VERSAILLES, Mo., town, county-seat of Morgan County, on the Missouri Pacific Railroad, about 38 miles southwest of Jefferson City. It is in an agricultural region and in the vicinity are valuable deposits of iron, kaolin, copper and lead. There are nearby large fields of bituminous coal. The products of the mines contribute largely to the prosperity of the town. There are two banks and a high school, established in 1894. Pop. about 1,598.

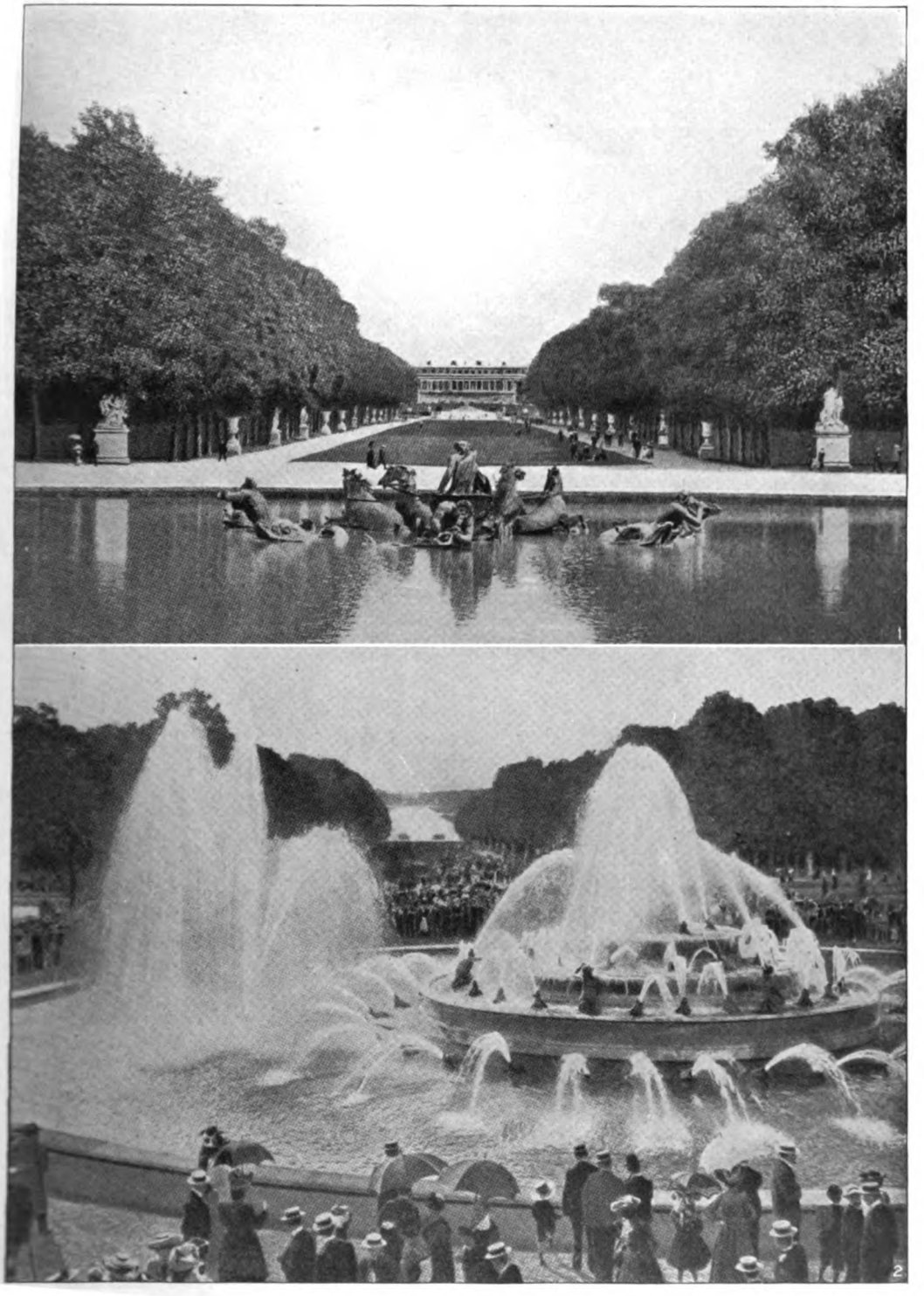
VERSAILLES, Ohio, village in Darke County, on the Cincinnati, Hamilton and Dayton and the Cleveland, Cincinnati, Chicago and Saint Louis railroads, about 40 miles northwest of Dayton. It is in a farming section in which considerable attention is given to stock-raising. The chief manufacturing establishments are a flour mill, machine shop and creameries. The educational institutions are Saint Dennis Academy (Roman Catholic), a public high school, founded in 1884, public and parish schools and a public library. Pop. about 1,580.

VERSE, a line of poetry, consisting of a certain number of metrical feet, disposed according to the rules of the particular species of poetry which the author intends to compose. Also more commonly used as meaning a stanza, or combination of lines regularly recurring, whether like or unlike in measure. It may be either dactylic, iambic or trochaic, according to the foot that dominates. If the lines exhibit two, three or more measures, it is styled dimetre, trimetre, etc. In the broader sense verse means poetry when expressed in measured cadence, either oral or written. The origin of verse is lost in antiquity. Its cultivation indicates progress from the savage state, and it was probably an evolution from unconsciously poetic utterances of man at the dawn of human intelligence. It is doubtful if the verses of Hebrew poetry were measured, or had more of the mechanical form of poetry than an irregularly recurring cadence. The use of rhymed cadences is comparatively modern. The multiplication of poetry and the growing fastidiousness of taste have constantly tended to increase the varieties of verse. Grammarians have elaborately classified these, and analytically distinguished the possible divisions of words into bars of accented and unaccented syllables. A mechanical adherence to a uniform measure is, however, irksome in poetry as well as in music; and poets who are gifted with any command of language vary their verse as their feelings dictate. These arbitrary changes it is impossible to classify. Modern French and Italian verse is almost always rhymed. In America, England and Germany there are the varieties of blank verse and rhyme. See METRE; POETRY; RHYTHM.

VERSECZ, vĕr'shĕts, Hungary, a town in the county of Temesvar, 42 miles by rail south of the town of Temesvar. It is the see of a Greek bishop, and has silk-mills, and a large trade in silk and wine. There are remains of an old castle. Pop. 31,000.

VERSIFICATION. The derivation of this word from Latin *versificatio*, versification, from *versificare*, to versify, from *versus*, line, verse, + *facere*, to make, shows that it means the act or practice, and therefore the art, of composing poetic verse. By extension, it also means the science of analyzing the principles on which that art depends, especially rhythm, metre, rhyme, assonance, and alliteration. Verse is the name given to an assemblage of words placed in measured and cadenced formation so as to produce a metrical effect. In poetry, rhythm signifies that measured movement of language which is produced by

VERSAILLES



1 The Car of Apollo, the grass plot called "Tapis Vert," and the Palace

2 The Fountain of Latona

the regularly repeated occurrence of metrical units called feet. Metre is the measurement of verse by means of feet. Rhyme is either the correspondence of sounds in the terminating words or syllables of different verses (end-rhyme) or the correspondence of sounds at the middle and the end of the same verse (internal rhyme). Perfect rhyme requires not only that the vowel sounds be the same, but also that the consonants preceding the vowel sounds be different and that the consonants (if any) following the vowel sounds be the same. If the rhyme is only in the last syllable, as *day, way, forgave, behave, relent, misspent,* it is called a male rhyme; if in the last two syllables, as *bitter, glitter, tending, mending,* it is called a female, or double, rhyme. Sometimes the last three syllables rhyme, as *callosity, reciprocity, sundering, thundering,* in English; *tavola, favola,* in Italian, and then the rhyme is called triple (Italian *verso sdrucciolo*). Rhymes extending to more than three syllables are almost confined to the short odes (*gazelles*) in Arabian and Persian, in which the same rhyme, carried through the whole poem, extends sometimes to four and more syllables. The origin of rhyme is lost in antiquity. It is found, at least sporadically, in the early poetry of most countries, including even that of Greece and Rome. Assonance is a sort of substitute for rhyme, consisting in using the same, or similar, vowel sounds, with the following consonants different, as *man, hat, penitent, reticence.* It is especially common in Spanish poetry. Alliteration, sometimes called head-rhyme, means that all or some of the accented syllables in a verse begin either with a vowel or with the same consonants, as:

1. Apt alliteration's artful aid
2. He thurgh the thikkeste of the throng gan threst
3. Hire robe was ful riche of red scarlet engreyned

In all languages known to us, poetry appears to have been the first form assumed by literary composition. The earliest poets fashioned for themselves the metrical plan in which their works were presented. Using these poems as examples, later critics and grammarians formulated the rules and principles of verse-making for the guidance of future poets. From time to time as poetry multiplied and taste grew more fastidious, new varieties of verse were invented, and, if found to be of merit, were adopted and took their recognized place in the republic of letters. It is the function of the present article to give a short explanation of the poetical forms occurring in some of the principal literatures of the world. Sanskrit, Greek, and Latin poetry is regulated by the principle of quantity, plus syllabic count. The ancient Greeks regarded the art of verse as a branch of music. According to Suidas, Lasus of Hermione, Pindar's master in music, wrote an 'Art of Poetry,' but nothing of this work has come down to us. In the 3d century B.C., Aristoxenus of Tarentum, a disciple of Aristotle, wrote 'Elements of Rhythm' (*Ρυθμικὰ στοιχεῖα*). Of this work only brief fragments have been preserved, but they are of great importance as showing the view of the Greeks regarding the interrelation of verse and music. It is, however, from Hephæstion, a scholiast of the 2d century A.D., author of a work on Greek metres, entitled '*γχειρίδιον περὶ μέτρων*,' that most of our information regarding classical prosody is derived. The publication, in 1868, of the works of J. H. Schmidt, based on a close study of the surviving remains of Greek and Latin poetry, and disregarding to a large extent the views expressed by the ancient metricians, resulted for a time in setting up a different theory as to classical versification. In more recent years the tendency has been rather to revert to the teachings of the ancients. According to Schmidt, the unit of measure for the foot is the mora, or short syllable (⏑), which has the musical value of an eighth note; a long syllable (—) is roughly equivalent to two moræ. A long syllable may be protracted in certain measures to the length of three (⏑‿) or four (⏑⏑) moræ. Conversely, a syllable may be so shortened, or hastened in sound, as to take up less than its normal time. These variations are best observed in logaœdic verse (q.v.). Every foot has one part accented, the other part unaccented. Thesis was the name given by the Greeks to that part on which the ictus (= stress or metrical accent) falls; arsis was the name given by them to the unaccented part. In later times, the use of these two terms was exactly reversed; but most modern metricians now employ them in their original sense. The principal feet are Iambus (⏑—), Trochee (— ⏑), Tribrach (⏑⏑⏑), all of three moræ or ⅜ time; Anapæst (⏑⏑—), Dactyl (— ⏑⏑), Spondee (——), Proceleusmatic (⏑⏑⏑⏑), all of four moræ or ½ or ½ time; Cretic (— ⏑ —), First Pæon (— ⏑⏑⏑), Fourth Pæon (⏑⏑⏑—), Bacchius (⏑——), Antibacchius (——⏑), all of five moræ or ⅝ time; and Choriambus (— ⏑⏑—), Ionic a maiore (——⏑⏑), Ionic a minore (⏑⏑——), all of six moræ or ½ or ¾ time. Besides these, there are also Pyrrhic (⏑⏑), Irrational Trochee (—>), Irrational Spondee (> —, occasionally — >), Irrational Dactyl (>⏑⏑), Cyclic Dactyl (⏑⏑), Irrational Anapæst (⏑⏑>), Cyclic Anapæst (⏑⏑), Molossus (———), Amphibrachys (⏑—⏑), Dispondæus (————), Ditrochæus (—⏑—⏑), Diiambus (⏑—⏑—), Antispastus (⏑——⏑), Second Pæon (⏑—⏑⏑), Third Pæon (⏑⏑—⏑), Epitritus Primus (⏑———), Epitritus Secundus (—⏑——), Epitritus Tertius (——⏑—), Epitritus Quartus (———⏑), and Dochmius (⏑——⏑—).

The combinations of these various feet produce verse. According to the nature of the fundamental foot, the verse is named iambic, dactylic, trochaic, etc. When the last foot of a line is incomplete, i.e., lacking one or more syllables, the line or verse is called catalectic; if the number of syllables is complete, the verse is said to be acatalectic. When a word ends within a foot, there is a break, to which the term cæsura is applied; when the end of a word and the end of a foot coincide, there is a different sort of break, which is known as diæresis. The iambic trimeter acatalectic line, having the iambi arranged in dipodies, was used for the dialogue of the drama, tragic and comic, with much freedom of substitution of other feet for the iambi, especially in comedy. This line was called by Roman grammarians the senarius. The iambic tetrameter catalectic, or

septenarius, was of frequent occurrence in comedy, with again great freedom of substitution. Iambic metre was also used extensively by the lyric poets. The trochaic tetrameter catalectic line (seven feet and one syllable), having the trochees arranged in dipodies, was written by Solon, Archilochus, and Epicharmus, and is often found in old Attic comedy. Under the designation of trochaicus septenarius it was frequent in Latin comedy and in the writings of Seneca, Varro, and later Latin poets. The anapæstic line, allowing metrical equivalents in certain positions for the anapæst proper, is more common in Greek than in Latin. It is found in Æschylus, Sophocles, and Aristophanes among the Greeks, and among the Romans in Plautus, Seneca, Varro, Prudentius, and later writers. The hexameter dactylic line, with substitution of spondee and trochee in certain positions for the dactyl proper, was the measure used in the great epic poems like the 'Iliad,' the 'Odyssey,' and the 'Æneid.' It is also the principal metre of didactic, bucolic, and satiric poetry. Joined to the dactylic pentameter, it formed the elegiac distich so well known from the poems of Ovid and some of the epigrams of Martial. Cretic and Bacchiac lines were used to voice intense emotion. Verses formerly known as Choriambic are now generally classed as Logaœdic; the true Choriambus is very rare. Ionic verse is used largely by Catullus. In mediæval Latin, rhyme came into use and quantity gave place to accent. Already in the 1st century A.D. there are poems containing rhymes, and even somewhat earlier than that, e.g., in the poems of Ovid, rhymes occur; but the first fully rhymed Latin poem was written by Saint Augustine against the Donatists c. 393. Church hymns, like 'Pange, lingua' and 'O salutaris hostia,' afford an excellent illustration of the change, both as to the employment of rhyme and the subordination of quantity to accent.

From the mediæval Latin, metrical system was developed by slow and almost imperceptible degrees the versification of the Romance languages (i.e. Italian, French, Provençal, Spanish, Portuguese, Wallachian, and Rhæto-Romanic), with accent, syllabic count, and rhyme as its characteristic elements. New species of rhythms, depending on the varieties of mood, were introduced. At first assonance was used instead of rhyme, as, for example, in the Provençal 'Boecis' (10th century) and the French 'Chanson de Roland' (11th century); after the 12th century the assonance was gradually displaced by full rhyme. The lines were joined together by similarity of assonance or rhyme in groups or strophes of varying length known as *laisses* or *tirades*, corresponding roughly to the modern stanza. Finally, elaborate stanzaic forms of great beauty were invented. In Italian in the 16th century, under the influence of classical Latin, there were developed rhymeless verses (*versi sciolti*). These are found in Ariosto's comedies and in such works as Trissino's 'Sofonisba.' In Spain, *versos sueltos;* in France, *vers blancs*, and in England, *blank verse* were written on the Italian model. Lines of various length are used in Romance poetry — six-syllable, seven-syllable or settenario, octosyllabic, nine-syllable, decasyllabic, hendecasyllabic, twelve-syllable or Alexandrine, and fourteen-syllable. The earliest of these to occur is the decasyllabic, which has been doubtfully traced to the 'Vita Sancti Faronis' in the 9th century, but is certainly found in the 'Boecis' and the 'Chanson de Roland' mentioned above, as well as in the 'Vie de Saint Alexis' (11th century). To secure uniformity of count, hiatus, elision, and contraction of words are permitted. The principal Italian verse is the hendecasyllabic, and next to it in order of frequency of occurrence is the settenario. From Provence first and later from Italy the decasyllabic line found its way into Spain. Fourteen-syllable, eleven-syllable, nine-syllable, seven syllable, and five-syllable verses are common in Spanish poetry. The octosyllabic line did not find favor in Italy, Portugal, or Spain, but it had a great vogue at an early period in France and Provence. It is found in the French and Provençal mediæval narrative poetry, as well as in the so-called courtly epos and the older drama. It fell more or less into disuse about the middle of the 16th century, and is now confined to lyric poetry. The great French line is, however, the Alexandrine or twelve-syllable iambic measure. Taking the place of the verses of ten and eight syllables, it is found in the *chansons de geste* and also in didactic poetry and the drama. It reached its climax in the 16th century, and has never since quite lost its importance. It is the metre of the tragedies of Corneille and Racine, the comedies of Molière and Regnard, the epic poem 'La Henriade' by Voltaire, the romantic drama 'Hernani' by Victor Hugo, and of numerous other plays and poems. Trochaic verse was much cultivated in Spain and Portugal, but not nearly to the same extent in Italy, France, or Provence.

English and the other Germanic languages use an accentual rhythm in their verse system. This accentual rhythm, together with alliteration, but with scarcely any perceptible attempt at foot-division, is found in the earliest known Germanic poetry. It is fully illustrated in what has come down to us of Old Saxon, Old Norse, and Anglo-Saxon, as, for example, in the 'Heliand' and the 'Lay of Hildebrand' (both Old-Saxon), in the 'Atli' and 'Harbard' lays (Icelandic), and in 'Beowulf' and the poems of Caedmon and Cynewulf (all Anglo-Saxon). In this early poetry the accented syllables are limited in number, but there is considerable latitude as to the number of unaccented syllables. The regular line consists of two half lines fused together by the alliteration. The following two verses from 'Beowulf' may be taken as characteristic:

Oft Scyld Scefing· sceathena *th*reatum,
monegum maeg*th*um,· meodo-setla ofteah.
("Oft Scyld Scefing reft away their mead-benches from the throngs of his foes, from many a people.")

End-rhyme is practically unknown. The earliest deliberate use of it in a Germanic dialect is in Otfried's 'Evangely,' written in Frankish in the latter part of the 9th century. Under the influence of Romance versification, the old native alliterative unrhyming system gradually disappeared in favor of the full and regular syllabic count and end-rhyme. We have a good example of the transition stage in the combination of the two forms in Layamon's 'Brut' (c. 1200). In this long poem both rhyme and alliteration are employed and, while there is some attempt at foot-division, there is still much freedom in the number of unstressed syllables, a freedom which, like the use of alliteration,

has never totally disappeared from English versification. By the 14th century the innovation had made such headway in England that it brought about a species of revolt, which resulted in the production of the very characteristic alliterative and rhymeless poem, Langland's 'Piers Plowman.' 'Sir Gawayne and the Grene Knyght,' by an unknown author, shows a compromise, for in its main body it is a rhymeless alliterative poem, but has short rhyming lines at the end of each stanza. The beautiful lyric, 'Pearl,' has a combination of elaborate alliteration and elaborate rhyme. The genius of Chaucer, however, decided the contest between the old and the new forms, and from his time the principles generally recognized in English verse are accentual rhythm and syllabic count, with free use of rhyme and occasional use of alliteration as an ornament. Freedom in the number of unstressed syllables persisted in many poems during the Middle English period, and at later times in popular ballads and in the "tumbling verse" of early modern English poets. This same freedom was revived by Swift in some of his humorous pieces, by Coledrige in 'Christabel,' by Scott in several of his narrative poems, and by numerous imitators down to the present day. The writers of *vers libre*, who are in revolt against nearly all metrical conventions, insist on this freedom as indispensable. The measures and combinations of measures in use in English versification are extremely numerous and varied. The feet most common are the iambic, the trochaic, the anapæstic, and the dactylic. There are lines of one foot, monometer; two feet, dimeter; three feet, trimeter; four feet, tetrameter; five feet, pentameter; six feet, hexameter or Alexandrine; seven feet, heptameter or septenarius; and eight feet, octameter. The combination of the hexameter with the heptameter formed the celebrated "poulter's measure," which had considerable vogue among 16th century writers. Perhaps it may be said that since Chaucer's time the central English line is the iambic pentameter, which, when written with every two lines rhyming together but not rhyming with what precedes or follows, forms what is known as the heroic couplet, and, when written without rhyme, is specifically called blank verse. The iambic pentameter is also a highly important line in German poetry, while in Dutch the most characteristic of verse forms is the Alexandrine. Iambic pentameter is used in English to form several distinctive stanzas, like Rime Royal, the Spenserian stanza, and the Ottava Rima. It is also used almost but not quite exclusively in the Sonnet. Rime Royal, a stanza of seven lines, is found in Chaucer's 'Troilus and Cresida,' in 'The Kingis Quhair' by James I of Scotland, in Sackville's 'Induction' to the 'Mirrour of Magistrates,' and in Shakespeare's 'Lucrece.' The Spenserian stanza of nine lines, the last of which is an Alexandrine, was invented by Spenser for 'The Faerie Queene.' It is used in Thomson's 'Castle of Indolence,' in Beattie's 'Minstrel,' in Byron's 'Childe Harold,' and in Shelley's 'Adonais.' The Ottava Rima, of eight lines, is handled to great perfection in the romantic spirit by Shelley and Keats and in a humorously satirical way by Byron in 'Beppo' and 'Don Juan.' The sonnet, a complete poem in 14 lines with an intricate rhyme-scheme, has been written by some of the greatest English poets — Spenser, Sidney, Shakespeare, Milton, Wordsworth, Rossetti, and Mrs. Browning. Blank verse proper, that is, unrhymed iambic pentameter measure, has held its ground steadily in English versification since its introduction in the 16th century by Henry Howard, earl of Surrey (c. 1516–47) in his translation (1557) of the second and fourth books of Virgil's 'Æneid.' Some blank verse occurs, it is true, in Chaucer's 'Tale of Melibee,' but it was Surrey who established it in English poetry. It was applied to tragedy by Sackville and Norton in 'Gorboduc' (1565), was highly developed by Marlowe in 'Tamburlaine the Great' and other dramas, was brought to perfection by Shakespeare, and since his time has been the generally accepted medium for English dramatic poetry. It is used for the same purpose in German. It has also been extensively employed for epic and reflective poetry. Such representative English works as Milton's 'Paradise Lost,' Thomson's 'Seasons,' Young's 'Night Thoughts,' Keats' 'Hyperion,' Browning's 'The Ring and the Book,' and Tennyson's 'Idylls of the King' are in blank verse. An attempt was made in the reign of Elizabeth by Gabriel Harvey and some of his literary friends to naturalize in English the quantitative dactylic hexameter and other classic metres, but their efforts were a dismal failure. The dactylic hexameter based on accent instead of quantity has been used sparingly in English verse, but it attained some success as produced by Southey, Clough, Kingsley, and, especially, Longfellow. It has also been successfully cultivated in German poetry, as, for example, by Schiller. Numerous lyric forms, such as the Ode, Ballade, Rondeau, Rondel, Sestina, Triolet, Villanelle, and Chant Royal, made their appearance at an early stage in different European literatures, and have been revived with varying degrees of success by some modern writers. They can be no more than mentioned in the present article, for they present a complicated technique, which may best be studied in some good book on versification. Writers of what has come to be known in quite recent years as *vers libre* are, as already stated, in revolt against hitherto accepted metrical conventions. They maintain that expression is the thing, and that rhyme and metre hamper the poet's full and free expression. Their definition of *vers libre* is "a verse-form based upon cadence." Its unit is neither the foot nor the line, but the strophe. Its rhythm is therefore not the rhythm of foot or line, but of the strophe only, and within the strophe it must have perfect freedom of swing as determined by, and consistently with, the demands of the speaking voice and the necessity for breathing spaces. Among the *vers librists* there are extremists, known as the Paroxysmists in France and the Vorticists in England, and there are many other gradations in their ranks, but there is also a comparatively conservative and well-balanced Centre party. The movement is too new and its ramifications too extensive and manifold to be adequately discussed here. It may be said, however, that, whether its theory will eventually establish itself or not, much genuine, thoughtful, and sincere poetic work has already appeared under the ægis of *vers libre*. In the poetry of the various Celtic languages, ancient and modern, there is an intricate and, in many respects, a beautiful system of versification,

which may, with great profit, be intensively studied by those who are interested in the general subject.

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VERST, or **WERST,** vĕrst, in Russia, a measure of length equal to 3,500 English feet, or very nearly two-thirds of a mile.

VERTEBRA, a segment of the backbone. See ANATOMY; BONE; OSTEOLOGY.

VERTEBRATA, a group name, no longer significant in classification, for all those animals (the vertebrates) considered collectively which possess a backbone, composed of vertebræ. (See ANATOMY; OSTEOLOGY). This category would include mammals, birds, reptiles, amphibians and fishes. These have important characteristics in common that distinguish them from mollusks, insects, crustaceans, worms and other animals of simpler type. Yet it was not until 1797 that the distinctive characteristics were stated by Lamarck, who drew a firm line between "back-boned," or vertebrate and "backboneless," or invertebrate, forms. Anatomists and embryologists have since made the distinctions that Lamarck pointed out more precise, and the more important characteristics may be summed up as follows: (1) In vertebrates the central nervous system, namely, the brain and the spinal cord, lies on the dorsal surface of the body, and is tubular in structure. (2) In all young vertebrates there is formed along the dorsal surface of the gut, and, therefore, of hypoblastic origin, a supporting rod or notochord, which in the simpler forms may persist throughout life, but in higher forms is more or less completely replaced by the backbone — an axis developed from the mesoblastic sheath of the notochord. (3) In almost all young vertebrates several pairs of slits or clefts open from the pharynx to the exterior; in some amphibians, all fishes and simpler forms they persist throughout life as respiratory organs, and are usually associated with feathery gills; in most amphibians they disappear during adolescence; in reptiles, birds and mammals they are practically functionless vestigial organs, which in a few cases do not even open. (4) A great part — for example, the retina — of the vertebrate eye arises as an outgrowth from the brain, whereas the eye of invertebrates develops as a direct insinking of the skin. (5) In vertebrates the heart is formed on the ventral surface, while that of invertebrates is dorsal. (6) Finally, vertebrates agree with annelids and arthropods among the invertebrates in being bilaterally symmetrical segmented animals. The segmentation is shown by the distribution of the nerves and ganglia, by the gill-clefts by the series of vertebræ, by the muscle-segments and nephridia (kidney-tubes) in embryonic life at least.

But, while our knowledge of these characteristics has become more precise, it is no longer possible to draw a boundary line between vertebrates and invertebrates with a firm hand. It can no longer be said that fishes form the base of the vertebrate series, for hag and lamprey (*Cyclostomi*), though in many ways more primitive, are certainly vertebrates; the lancelet (*Amphioxus*), though perhaps degenerate, cannot be excluded from the alliance; the *Tunicata* (q.v.), though almost always degenerate in adult life, are all vertebrates in their youth, and the worm-like *Balanoglossus* (q.v.) has also certain hardly disputable vertebrate characters. The possession of a backbone is, therefore, no longer so exclusively definite a mark of the group, as it once was, but instead, the presence of a notochord. The term vertebrate has, therefore, ceased to have scientific significance although it remains convenient for popular use to designate the groups more properly styled CHORDATA.

VERTICAL TRANSPORTATION. See ELEVATOR.

VERTIGO, dizziness, giddiness, or swimming of the head; a defect, real or seeming, in the equilibration of the body. Though the condition is sometimes so distressing as to be considered by the patient a disease, it is essentially only a symptom. It is believed that the cerebellum is the centre for the co-ordination of muscular movements, and that impressions from the semi-circular canals of the internal ear also influence the movements necessary for maintaining the equilibrium of the body. But the essential nature of vertigo is not yet clearly determined. By some it is believed to be due to disordered cerebral circulation; by others, to result from a disturbance of the central nerve-

ganglia. The sense of instability and of apparent rotary movement of the body or of other objects, always present, may be attended by mental confusion or loss of consciousness, or by anguish or terror. There may or may not be present also buzzing in the ears, mist or flashes of light before the eyes, nausea and vomiting, looseness of the bowels and a flow of pale urine. Vertigo may result from functional disorders of the heart or stomach, from defects in vision, from diseases of the middle ear, from some peripheral irritations (as laryngeal vertigo), from toxæmias, as in Bright's disease, from organic brain disease and from unrecognized causes. Grasset classifies vertigo under two heads, acute or accidental and chronic or habitual. Under the first head he places forms of it which attend the onset of acute infectious diseases, inflammations, influenzas and the vertigo which accompanies the stage of excitation in cerebro-spinal meningitis, that which appears with attacks of indigestion, the vertigo of acute alcoholism and of the first cigar, and the dizziness caused by swinging, dancing, seasickness or by looking down from a great height. Then there are acute toxic vertigos caused by digitalis, hemp, opium, belladonna, gelseminum, nicotin, etc., also others caused by heat, the introduction of a bougie, the suppression of habitual discharges, the pressure of wax or other accumulations on the drumhead, nasal obstruction and post-nasal catarrh, mental strain, emotional disturbances, etc. Under the head of chronic vertigos are placed epileptic vertigo, vertigo dependent upon disturbances in the sensory nerve-centres, especially auricular vertigo, stomachic and cardiovascular vertigo.

In the treatment of vertigo the main thing is to remove the cause. Vertigo caused by indigestion frequently demands a prompt emetic or purgative. The tone of the stomach may be restored by tincture of nux vomica or by dilute hydrochloric acid. Smokers' vertigo requires for relief a complete cessation from smoking, a slight laxative and bitters. For the vertigo of seasickness bromide of sodium or amyl nitrite and kola-seeds, diminishing as much as possible the drinking of liquids and the use of a tightly-drawn ventral bandage seem to be of most service. Ocular vertigo, dependent upon astigmatism, hypermetropia, paralysis of certain of the ocular muscles and various eye-strains may often be relieved by the oculist. See BRAIN, DISEASES OF; CEREBELLUM; EAR.

VERTUE, vêr'tū, **George,** English engraver and antiquary: b. London, 1684; d. there, 24 July 1756. He gained the favor of Sir Godfrey Kneller, Lord Somers and others, and upon the institution of the Academy of Painting in 1711 became one of the original members. When the Society of Antiquaries was revived in 1717 he was appointed its official engraver, nearly all the plates published in 'Vetusta Monumenta' down to 1756 being his work. He was engaged in making journeys through England for 40 years, collecting materials and making drawings for a projected history of the fine arts in England. His collection came into the hands of Horace Walpole, who published a portion of them under the title 'Anecdotes of Painting in England' (1762–71). To his own 'Catalogue of Engravers' (1763) he appended a biographical sketch of Vertue's life. Others of Vertue's best-known works are 12 'Portraits of Poets' (1730); 10 'Portraits of Charles I, and his Friends'; and the series of English kings published in Rapin's 'History.'

VERULAM, LORD. See BACON, SIR FRANCIS.

VERVAIN. See VERBENA.

VERVIERS, vĕr-vē-ā, Belgium, a town in the province of Liége, on the Vesdre, 14 miles southeast of Liège, and on the railway between Liége and Aix la Chapelle. Formerly a fortified town, its fortifications were destroyed by Louis XIV. It suffered severely in the German occupation 1914–18. It is celebrated for its manufacture of woolen goods and dyes. There are also cotton, leather and other manufactures. Pop. about 50,000.

VERY, Jones, American poet: b. Salem, Mass., 28 Aug. 1813; d. there, 8 May 1880. He was graduated at Harvard in 1836, and was Greek tutor there 1836–38. He became a Unitarian minister in 1843, but never held a pastoral charge although he preached occasionally. In 1839 he published a small volume of 'Essays and Poems'; the latter, among which 'The Painted Columbine,' is perhaps the best known, indicating an appreciative love of nature, and a deep religious feeling with a tendency toward mysticism, and these qualities are especially marked in his sonnets, which follow the Shakespearean model. His life was mainly spent in retirement at Salem. Consult 'Poems and Essays' (1880), with memoir by J. F. Clarke.

VESALIUS, vĕ-sā'lĭ-ŭs, **Andreas,** Flemish physician, founder of the modern system of anatomy: b. Brussels, 31 Dec. 1514; d. island of Zante, 15 Oct. 1564. He was educated at Louvain, Cologne, Montpellier and Paris, and was early distinguished by his knowledge of physics and his devotion to anatomical studies. The pursuit of practical anatomy was attended with so much difficulty and danger in France, that after returning to Louvain he joined the army of the emperor of Germany, and went to Italy, where in 1540 he was made professor of anatomy in the University of Pavia, in 1543 in that of Bologna, and not long afterward in that of Pisa. In 1543 he published his great work on anatomy, 'De Corporis Humani Fabrica' (enlarged edition 1555). Sénac calls it the discovery of a new world, and Haller speaks of it as "an immortal work, by which all that had been written before was almost superseded." In it Vesalius exposed the errors of the Galenian school, who relied for their knowledge of the anatomy of the human body upon the observations made in the dissection of the bodies of the lower animals. The work met with the fiercest opposition, but the author's reputation constantly increased. About 1544 he was made chief physician to the emperor Charles V, and afterward to his son Philip II. He was accused of heresy and condemned to death by the Inquisition, but his sentence was commuted by the emperor to a pilgrimage to the Holy Sepulchre. On his return he was shipwrecked at Zante. His collected works were published in 1725. Consult the study by Roth (1886).

VESICA PISCIS (literally, a fish's sound or swimming-bladder), the ovoid aureole or glory, formed by the intersection of two circles having a common radius, which, in the religious

symbolism of the early Middle Ages, is often represented encircling the whole body of the Lord Jesus. This form is supposed to have been gradually evolved out of the figure of the fish, prominent in the symbolism of the early Christians on sarcophagi and elsewhere, and whose use arose out of an anagram on the initial letters of Ιησους χριστὸς, θεου, Υἱὸς, Σωτήρ, Jesus Christ, Son of God, Savior: these initials formed the Greek word ἰχθύς (fish).

VESICANTS, or **BLISTERING AGENTS**, substances which, if kept in contact for some time with the surface of the body, excite such irritation as to cause effusion of serum from the true skin, leading to separation and elevation of the cuticle, and formation of a vesicle or blister. Vesicants are employed: (1) For relieving or removing the diseased condition of some internal part, by producing a determination of blood from the interior to the surface over the seat of the affection; (2) As general stimulants to the system, often beneficial in advanced stages of low continued fever; (3) for the direct purpose of withdrawing serum from the vascular system, for which they are prescribed with advantage in cases of sudden effusion into the pericardium or the pleura; blisters for this purpose should be of large size, and should be kept in contact with the skin sufficiently long to produce their full effect (24 hours being necessary in the case of some persons); (4) For removing the cuticle, to permit the direct application of various medical agents, especially mercury and morphine, to the absorbing surface of the true skin. In infancy and childhood, these agents must be used with extreme caution.

To produce vesication, Cantharidine, the active principle of Cantharides, or Spanish Flies, in one of its various forms, is generally employed, though other substances also are used. Cantharidine is a white crystalline substance, extracted from the powdered insects by rectified spirit, and whose composition is represented by the formula $C_5H_6O_2$. It is a very active poison, and produces immediate inflammation of the skin wherever it comes in contact with it, is very volatile even at ordinary temperatures, and is soluble not only in alcohol, but also in chloroform, ether, strong acetic acid and many oils. In preparing a blister, it is expedient to sketch the desired shape and size, and before applying it the skin should be well washed with warm water. If the patient's skin is not easily acted upon, the part should be sponged with vinegar; but if it is very susceptible a piece of tissue-paper should be placed between the skin and the plaster. To insure close contact with the skin, the blister should be gently warmed, carefully applied, avoiding creases, and kept in its place by a bandage; and to produce its full action, it should be kept on for 10 to 12 hours. If, on removal after that time, full vesication has not been produced, a hot poultice will often secure the desired effect. The raised cuticle should be punctured, to allow the escape of the serum, except in the case of children and persons of very irritable skin, when the vesications should be left unopened, and a dressing of simple ointment or spermaceti ointment on soft rag applied and repeated in 24 hours; or the part may be at once covered with cotton-wool. The troublesome itching which often follows application of a blister is best relieved by a bread-and-water poultice, moistened with the dilute solution of acetate of lead. Collodium Vesicans is prepared by mixing equal parts of collodium and cantharidal ether. It possesses the advantage that its strength can be readily increased or diminished.

When a blistering agent with very rapid action is required, as in the state of collapse in cholera, recourse may be had to the application of boiling or nearly boiling water to a portion of the abdomen, the surrounding surface being protected by a wall of damp cloths. Cold water may be used as efficiently as boiling water: a piece of bibulous paper, such as common blotting-paper, should be soaked in cold water, applied to the part to be vesicated, and covered with three or four folds of dry paper. A common smoothing-iron heated to 212° F. is then pressed three or four times over all; and on removing the paper, the part will be found vesicated. In less urgent cases an almost immediate blister may be produced by saturating a piece of lint in a strong solution of ammonia, and applying it to the skin with moderate pressure. By the time the ammonia has evaporated, the required result is usually obtained. When it is desired to keep up a discharge from a blistered surface, instead of healing it as is commonly required, or to produce a *perpetual blister*, the raw surface is dressed with irritants of various kinds, such as savine ointment. At each fresh dressing (in summer twice a day), the part should be cleansed in warm water.

VESPASIAN, vĕs-pā′zhĭ-ăn (TITUS FLAVIUS SABINUS VESPASIANUS), emperor of Rome: b. Reate, in the country of the Sabines, 17 Nov. 9 A.D.; d. June 79. Being appointed commander of a legion in the reign of Claudius he acquired great reputation in Germany and in Britain, and on his return to Rome was made consul. Subsequently he was appointed pro-consul of Africa; and on the rebellion of the Jews was sent with an army into Judea (66). After subduing almost the whole of Galilee he was about to attack Jerusalem, when he received the news of the death of Nero (68 A.D.). After the transient reigns of Galba, Otho and Vitellius, he was elevated to the Imperial power, and reaching Rome about the middle of the year 70, was received with great rejoicing. He reformed the army discipline, and appointed a commission to settle the vast multitude of suits which had accumulated during the late troubles, besides presiding on the bench frequently himself, that justice might be administered with impartiality. Vespasian favored arts, letters and learned men, particularly Quintilian, Pliny and Josephus. He rebuilt a part of the city, restored the capitol with increased splendor, and erected the gigantic amphitheater, the ruins of which are known as the Coliseum. Among important public events of his reign are the termination of the dangerous rebellion of the Gauls under Civilis, and the capture of Jerusalem by his son Titus, whom the emperor had made his lieutenant in Judea.

VESPER SPARROW, GRASS FINCH, or **BAYWINGED BUNTING**, a well-known and abundant bird (*Poöcætes gramineus*), of the family *Fringillidæ*, found throughout the eastern United States and Canada, and represented in other parts of temperate North

America by distinct sub-species. It is about six inches long and may be recognized by its streaked plumage, the bay or chestnut wing-patch and the white outer tail-feathers which are conspicuously shown during flight. The three common names of this bird show the interchangeability in ordinary usage of the appellations applied to the species of *Fringillidæ* and illustrate three peculiarities of this bird: the first, its habit of singing at sundown; second, its abundance in grassy fields, and the third, the rather characteristic wing markings. No bird is more familiar to the stroller along country roads and byways in the New England and Middle States than the grass finch. It spends much of its time on the ground, but often perches on fences, telegraph wires and trees. Except during the breeding season it is gregarious and consorts with other ground-loving sparrows, like which it feeds upon seeds, grains and insects for which it often searches by the roadside. When approached, the grass finch runs rapidly and seldom flies more than a few yards before alighting. It is a bold and confiding bird. Its migrations are not extensive and it leaves late, returns early, and in open seasons a few may even remain throughout the winter in the Middle States. From the latitude of Virginia and Missouri northward is its breeding ground. The nest is placed on or near the ground and is a bulky structure of weed stems, leaves and grasses, with a lining of fine grasses or hairs. The eggs are usually four or five, dull white, variously tinted and blotched at the larger end, especially with lilac and brown. Two or even three broods may be raised. As mentioned above the soft and sweet, but clear song is heard most frequently toward evening, but is by no means confined to that time. Consult Wilson, 'American Ornithology.'

VESPERS (late Lat. *vesperæ*, vespers; plur. of *vespera*, evening), in the breviary (q.v.) of the Roman Catholic Church, the canonical hour following the nones and preceding compline, and thus the next to the last of the seven canonical hours. Also a religious service at evening.

VESPERTILIONIDÆ, vĕs-pĕr-tĭl-ĭ-ŏn'ĭ-dē, a family of bats including the great majority of small insectivorous species, and especially characteristic of temperate regions. In this family the muzzle has no nose-leaf, the premaxillary bones are defective and separated by a wide median vacuity, the number of incisor teeth is usually two on each side above and three below, and the tail is nearly or quite included in the interfemoral extension of the wing-membrane. With the exception of a few found along the southern borders all of the bats of the United States belong to this family, nine genera and about 25 well-marked species being included. Among them may be mentioned the long-eared bat (*Corynorhinus macrotis*), typifying the subfamily Plecotinæ, in which the bases of the ears are joined across the top of the head, and which is found in the Southern States north to Virginia, the well known and variable little brown bat (*Myotis lucifugus*), so abundant everywhere in the east, and represented by closely related species westward, the pretty and equally abundant red bat (*Tasiurus borealis*), the larger and much rarer hoary bat (*T. cinereus*) which, like some other species, is a regular migrant, the larger brown bat (*Vespertilio buscus*), the twilight bat (*Nycticebus humeralis*) and the pipistrelle (*Pipistrellus subflavus*), all of which are more or less plentiful in the Eastern States and whose habits are generally similar and familiar. A very distinct species of California and the Southwest is *Antrozous pallidus*, which has only two incisors on each side below and a slightly marked nasal fold. It belongs to the subfamily *Antrozoinæ*. Consult Miller, 'North American Fauna No. 13' (Washington 1897), and Allen, 'Monograph of North American Bats,' United States National Museum Bulletin, No. 43.

VESPUCCI, vĕs-poo'chē, **Amerigo** (Latinized AMERICUS VESPUCIUS), Italian navigator: b. Florence, 18 March 1452; d. Seville, 22 Feb. 1512. He acquired in some fashion "an excellent practical knowledge of astronomy," and was the greatest expert of his day in the calculation of latitude and longitude. A clerk in the commercial office of the Medici at Florence, he made an avocation of the study of geography and the collection of globes, charts and maps. He became, too, a skilled map draughtsman. Some time between the middle of 1489 and the end of 1491 he was sent to Barcelona as representative of the Medici in connection with Spanish business interests of importance; and in 1493 he became connected with the commercial house of Juanoto Berardi at Seville. Berardi was in the employ of the Spanish Crown, and fitted out vessels for expeditions across the Atlantic. In 1495 he signed a contract for supplying 12 vessels of 900 tons burden in aggregate; and when he died in December, Vespucci settled the remainder of the contract and the various obligations in connection therewith. It is thus probable that Vespucci participated in the fitting out of Columbus' second voyage. Knowledge of Vespucci's career between early in 1496 and late in 1504 is based on two letters written by him, one (March or April 1503) to Lorenzo di Pier Francesco de' Medici, the other (4 Sept. 1504) to Piero Soderini, gonfaloniere of Florence. The latter gives an account of four voyages in which the writer took a part, the earlier two in the service of Spain, the latter two in that of Portugal. The first expedition started from Cadiz port 10 May 1497 and returned 15 Oct. 1498, and Vespucci accompanied it as "astronomer." Hence, to all intents and purposes the voyage was his. As an officer of such importance, then Vespucci sailed. His account above mentioned is a cursory epistle, not an official report, and, therefore, of course — but unfortunately — fails to supply many details that would now be of great value. He does, however, tell something of the flora and fauna of the regions visited, the natives and their customs. The letter to Soderini got into print in two editions, though it is highly improbable that Vespucci had any part in their appearance. The letter says that the expedition, after running to the Canaries, made land 1,000 leagues about west-southwest from those islands, coasted for 870 leagues along a shore so extensive that it was thought that of a continent, passed 37 days in a fine harbor and then returned to Spain. Vespucci, then, probably sailed from Cape Honduras to a point not far

from Cape Cañaveral, Fla. Thus he visited what he thought was the continent of Asia, but was really that of America, a year before Columbus. Owing either to a typographical error or the arbitrary alteration of an editor, a proper name Lariab, in the Italian version, has become Parias in the Latin. Lariab was apparently a name belonging to the country of the Huastecas around the river Panuco, while Parias was a name of a region 2,400 miles distant, on the South American east coast. This confusion of Lariab and Parias occurred despite the fact that Vespucci scrupulously gives latitudes and longitudes. As a matter of fact, at the time of the writing of the letter (1504), Columbus was supposed to have discovered Asia by a new route in 1492, and Vespucci, had he wished to antedate Columbus, must have placed his first voyage before that date. In the letter to Lorenzo de Medici, regarding his third voyage only (14 May 1501–7 Sept. 1502), Vespucci refers to the regions visited (The Brazil coast to lat. 34° S., running thence southeast to South Georgia Island) as a "new world," because unknown to the ancients. One Giocondo, who prepared a Latin version, apparently from the Italian manuscript original, gave his rendering (1504) the title 'Mundus Novus.' This was put down as equivalent to what is now known as Brazil. Then the suggestion was given that Mundus Novus was the so-called Fourth Part of the earth, and ought to be called America, from its supposed discoverer, though as we now know Columbus had already reached it. Thus the name came to be equivalent to South America, and finally to the two continents. Consult the critical and biographical notes by Winsor in his 'History,' Vol. II (1886); Fiske, 'The Discovery of America' (1892); Harrisse, 'Discovery of North America' (1892).

VESSELS. See SAILING VESSELS; STEAM VESSELS.

VESSELS, Entry and Clearance of. According to the provisions of the clearance law of 1902, the master of a vessel engaged in international commerce is required to deliver to the collector of the port of departure, prior to sailing, a sworn manifest. Shippers' manifests are also required from the consignors. When all requirements as to inspection, fees, etc., have been satisfied, the collector issues clearance papers for the ship and its cargo. Coastwise vessels must take out clearance papers if they clear from one customs district to another. The masters of vessels of American registry are required, when entering from foreign ports, to deposit with the port collector their register and clearance papers and these are retained until the vessel clears. Masters of vessels of foreign registry are required to show similar papers and then deposit them with their consul until time for their clearance. The names of the vessel owners appear on the papers of American vessels. Entering vessels give copies of their original manifests to the customs officers who are also empowered to inspect the originals. Entry and clearance fees are fixed by law. Consult United States Treasury Department, 'Navigation Laws of the United States' (1911), and Johnson, E. R., 'Ocean and Water Transportation' (1905).

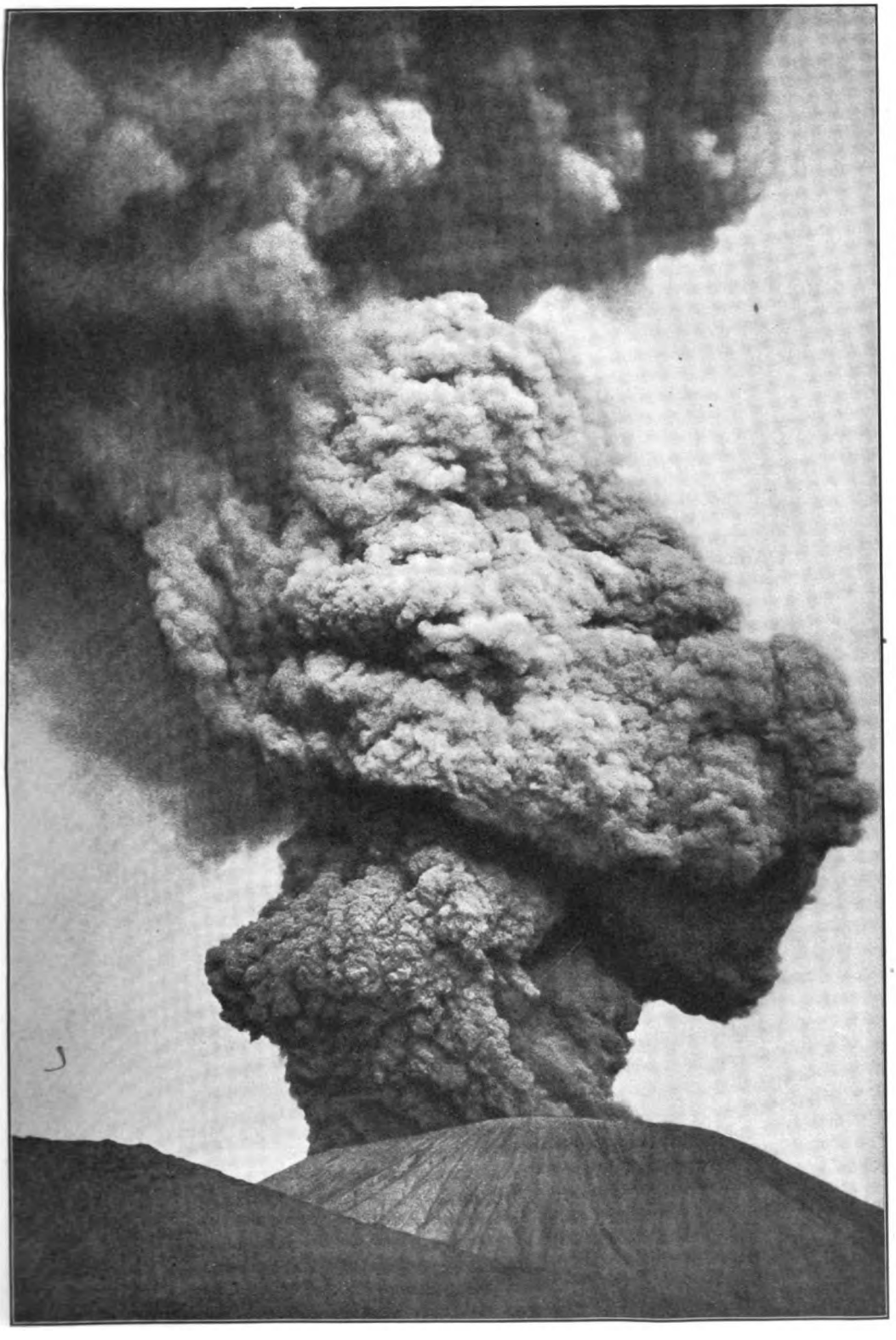
VEST, George Graham, American lawyer: b. Frankfort, Ky., 6 Dec. 1830; d. Sweet Springs, Mo., 9 Aug. 1904. He was graduated from Centre College, Danville, Ky., in 1848 and from the law department of Transylvania College in 1853. In the last-mentioned year he removed to Georgetown, Mo., where he engaged in the practice of law, removing thence to Boonville, Mo., in 1856. He was a member of the Missouri legislature in 1860–61, and at the outbreak of the Civil War he espoused the cause of the Confederacy. He served in the Confederate army in the summer of 1861, and was elected in that fall to the Confederate Congress, in which he served for three years. After the War he resumed his law practice, settling at Sedalia, Mo. He was elected to the United States Senate in 1879, and was re-elected in 1885, 1890 and 1897. He was prominent as a committeeman in the Senate; earned a national reputation as a debater; and was an acknowledged leader in national affairs. He was the last member of the Confederacy to act as a member of Congress. In 1903 physical disability necessitated his retirement from office.

VESTA, the Roman goddess of the hearth identified with the Greek Hestia. The worship of Vesta arose from the necessity and difficulty in primitive times of obtaining fire. The custom came about of maintaining at some point a perpetual fire for general use, and this was continued after the necessity had ceased. The flame was personified, and associated with the Penates (q.v.) as a deity of the state. Vesta was not represented by any statue in the temple devoted to her honor, but by the symbolic fire kept perpetually burning on the hearth or altar by the vestals, her virgin priestesses. In Rome, on 1 March of every year, the sacred fire and the laurel tree shading her hearth were renewed; on 9 June, the festival called Vestalia was celebrated; and on 15 June her temple was cleansed and purified. Prætors, consuls and dictators, before entering upon their functions, sacrificed at Lanuvium, where the cult was believed to have been established first in Italy.

VESTA, *in astronomy,* the name of the fourth asteroid, discovered by Olbers at Bremen 29 March 1807.

VESTAL VIRGINS, women dedicated to the service of the goddess Vesta, and bound by vows of chastity for the limited period of 30 years. They were also termed vestals. The worship of this goddess is supposed to have originated in the guardianship of a central or village fire by the earliest communities of men. The difficulty of kindling fire before the invention of the lucifer match was general and in prehistoric times the care of a fire for the common use must have been a most important duty. It would naturally be entrusted to women, and preferably to those who were not distracted from it by family ties. The duty of maintaining this fire became a sacred function connected with the worship of a presiding goddess, after its original significance had been lost. Annually, on 1 March, the Latin New Year's Day, the fire was extinguished, and rekindled either by the friction of dry sticks, or, in later times, by the sun's rays being brought to a focus by a concave mirror.

The vestal virgins who had charge of the



ERUPTION OF MOUNT VESUVIUS

sacred fire were chosen by the king in the early days of Rome, and by the pontifex maximus under the republic and the empire. There were originally four and later six vestal virgins. The candidate was to be over six and under 10 years of age, free from defects, with father and mother living, and daughter of a freeborn resident of Italy. Her hair was cut off, and she was formally initiated by the pontifex maximus, who thenceforth held toward her the relation of a religious father. The vestals had many privileges, and the honor was eagerly sought. After 30 years they could return to private life, and marry, if they chose. Violation of the vow of chastity during their years of service as vestals was punished by burial alive, and as the conviction was usually obtained on the evidence of slaves under torture, it is considered probable that some suffered who were innocent. The worship of Vesta disappeared with other pagan practices when Christianity became the religion of the empire.

VESTED RIGHTS, in law, a technical phrase, denoting a present fixed interest resting in a particular person or particular persons. They are opposed to contingent rights, which depend on some event or condition which may not come about before some other event or condition prevents their vesting. It is the general policy of lawmakers and the courts to uphold what are known as vested rights and not to allow interference with them without due compensation. The 5th and 14th amendments of the Constitution of the United States are aimed to protect such rights from infringement by new legislation. See PROPERTY.

VESTMENTS, Ecclesiastical, the garments worn at religious services by priests and prelates of the Protestant Episcopal, Roman Catholic and other churches. Nearly all denominations, even those that repudiate vestments, expect their ministers to wear attire indicative of their vocation, and this custom is not confined to Christian ministers, but prevailed in the Jewish hierarchy, and is still maintained in the religious system of modern Jews. In the Buddhist and Hindu religions, and in pagan creeds of all kinds so far as known, the priests wear some garment or symbol to distinguish their order. For vestments worn in Roman Catholic and Protestant Episcopal churches, see CHASUBLE; COSTUME, ECCLESIASTICAL; STOLE, etc.

VESTRIS, Lucia Elizabeth Bartolozzi, English actress, granddaughter of Francesco Bartolozzi (q.v.): b. London, January 1797; d. Middlesex, 8 Aug. 1856. She was carefully educated, and at 16 was married to Armand Vestris, a member of the famous family of dancers. In 1815 she separated from him and made her début on the Parisian stage with moderate success. Her appearance in London in 1820, however, was a marked triumph; she became famous in 'The Haunted Tower' playing at Drury Lane, and subsequently added to her reputation in the part of "Phœbe" in 'Paul Pry.' While lessee of the Olympic in 1838 she was married to Charles James Mathews. She was afterward manager of the Lyceum and of Covent Garden.

VESTRY, a room adjoining a church where the vestments of the clergy are kept. Hence the place of meeting of those who had the charge of parochial affairs, and subsequently the persons themselves to whom these affairs were entrusted. This is the present meaning in American churches. Vestries, under church establishment in England, were originally entrusted with the secular affairs of the church, as the maintenance and repair of the building, and the levying of church rates for this and other purposes. They latterly acquired a general control of the affairs of the parish, but by the Local Government Act of 1894 the vestries in rural parishes were superseded as regards their civil powers by the parish council or parish meeting. The vestries which formerly managed the affairs of the populous parishes of London were done away with by the London Government Act of 1899, under which a number of metropolitan boroughs, each with its own mayor, alderman and council, were established in their place and in the place of other anomalous authorities. In the United States, where no connection between Church and State is recognized by law, the vestry is wholly confined to its duties as a body chosen from the congregation to attend to the interests of the church. In the Protestant Episcopal Church the vestry usually consists of 10 men, of whom two are wardens. They are elected by the members, and they in turn elect the rector, as well as manage the business affairs of the church.

VESUNNA, the ancient name of Périgueux (q.v.).

VESUVIANITE, or **IDOCRASE,** one of the commonest minerals which occur in tetragonal crystals. It is essentially a basic calcium and aluminum silicate, but all analyses show some iron and magnesium and occasionally titanium and manganese. The crystals are generally prismatic, terminated by the base often combined with the unit pyramid. Highly modified crystals are not infrequent. It also occurs massive and columnar. It has a hardness of 6.5 and a specific gravity of about 3.4. Its lustre is vitreous to resinous and sometimes splendent, while its colors are usually brown to yellow and green. A blue variety from Norway called "cyprine," owes its color to a trace of copper. Vesuvianite was so named in 1795 by Werner, who described the brilliant, brown crystals which are found in the ejected blocks of Vesuvius. The mineral has since been discovered in scores of localities, among the most noteworthy of which are the Vilui River in Siberia, Achmatovsk in the Urals, Ala in the Piedmont, Monzoni in the Tyrol, Wakefield in Quebec, near Helena, Mont., and Magnet Cove, Ark. It usually occurs in metamorphic limestone and the crystalline schists, or as a contact mineral.

VESUVIUS, vĕ-sū'vĭ-ŭs, Italy, a volcanic mountain, 10 miles southeast of Naples. With a basal circumference of about 30 miles, it rises from the centre of a plain 2,300 feet above the sea in a pyramidal truncated cone 1,500 feet high and about 2,000 feet in diameter; total height, 3,800 feet. In 1880 a funicular railway was laid to the summit, which was reconstructed and equipped for electrical working 1903–04, and supplemented by a new electric railway four and three-quarter miles long, from Pugliano, the

northern quarter of Resina, thus enabling visitors to travel by electricity from Naples to within 250 yards of the crater. Previous to an eruption about 1838, the top was an uneven plane, but was then converted into a hollow cup, with a rim 400 feet to 500 feet broad on its west side, and not more than 50 feet on the others, and with an internal sloping surface to a depth of 500 feet. A precipitous rocky ridge, forming an arc of a circle, and 1,400 feet in height, called the Monte Somma, is situated at a short distance from the cone on the north, from which it is separated by a deep valley called the Atrio del Cavallo. Near the western extremity of this valley is the observatory established expressly for watching the volcanic phenonmena. The lower part of the sloping plain, which rises gradually from the sea to the foot of the cone, forms a belt about two miles broad along the shore, laid out in vineyards and well cultivated, though intersected at intervals by terraces of black calcined matter. Beyond the cultivated belt the plain is rugged and covered with scoriæ of all forms and sizes. The cone itself is covered with loose matter composed of scoriæ, blocks of lava and volcanic sand, arranged in successive layers by the natural force of gravitation. The form of the pyramid has been modified by side eruptions and by the internal force acting upon the external matter before it has cooled. An internal movement of elevation has been proved by the angle at which continuous streams of lava are now found, being much greater than that at which they are known to have originally flowed. A stream of lava ceases to be continuous, and breaks into masses of scoriæ at an angle of more than 3°. Monte Somma is supposed to have formed at one time a complete cone of much larger dimensions and probably of greater height than the present cone, being subsequently thrown down by volcanic forces, in the same manner as 800 feet of the present cone was carried away by an eruption of 1822. From a difference of structure implying greater pressure, geologists have concluded that Somma was a submarine volcano, while the present is a subaerial one. Till 63 A.D., when many of the surrounding cities were damaged by an earthquake, no symptoms of activity are known to have been given forth by Vesuvius In 79 occurred the great eruption described in the well-known letters by the younger Pliny, which buried Herculaneum and Pompeii, and during which the elder Pliny perished while hastening with part of the Roman fleet to the relief of the inhabitants. Since that time there have been continuous symptoms of activity and numerous eruptions have taken place. The first recorded discharge of liquid lava after that of 79 was in 1036. Since then there have been many violent eruptions; the most noted were those of 1779, 1793, 1834, 1847, 1850, 1855, 1867, 1872, 1878, 1880 and 1895. The eruption of 1779 was particularly magnificant flames of fire rising to three times the height of the mountain, and stones, scoriæ, etc., being projected as high as 2,000 feet, while a river of lava 1,500 feet wide flowed for three and a half miles and extended 600 feet into the sea. In 1872 14 different orifices opened in the mountain sending forth rivers of lava that threatened to carry devastation far and wide. The villages of San Sebastiano and Massa di Somma were almost entirely destroyed. Early in April 1906 eruptions destroyed several small towns and villages in the vicinity and created wide devastation throughout the surrounding territory. See HERCULANEUM; POMPEII; VOLCANO.

VESZPREM, Hungary, town in the western part of the country about 65 miles southwest of Budapest. It contains a handsome episcopal palace, a fine cathedral, a Piarist college, and a gymnasium. Cloth and flannel-weaving, silk-spinning, cultivation of wine, fruits and tobacco are the principal industries. The town on several occasions was in the possession of the Turks; and an interesting memorial of them is a slender minaret rising from an old Gothic tower, and which long served as a watch-tower against fire. Pop. about 26,000.

VETANCURT, vā-tän-koort', or **VETANCOUR, Augustin,** Mexican historian: b. Mexico City, 1620; d. Mexico, 1700. He was a member of the Franciscan order at Puebla, in which he was held in high regard as a teacher and as a linguist. He was commissary of the Indies, a member of the provincial chapter and was actively engaged in missionary work. His writings include various biographies and theological essays, in addition to his great works 'Arte de Lengua Mexicana' (1673); and 'Teatro Mexicano' (2 vols., 1697–98).

VETCH, a name applied to many species of leguminous herbs, in the genera *Vicia, Astragalus, Phaca,* etc. They resemble pea-vines, and have pinnate, stipulate leaves and often climb over other plants by means of tendrils. The flowers are papilionaceous, of various colors, and the fruits are legumes or pods, containing the seeds. The broad or Windsor bean of Europe is one of the vetch tribe (*Vicia faba*). The vetches are numerous, and many of them, especially the common tares (*Vicia sativa* and *V. hirsuta*), are plants valuable either for grazing livestock, to cut for green fodder or for ensilage with corn. They are rich in nitrogen, and are important not only for green manuring, or plowing under the soil, so that by decay this nitrogen may be released, but because the roots are covered with tubercles that are the home of bacteria which have the power of assimilating free nitrogen from the soil, and converting it into such a form that it may be used by the host-plant. If the roots are left to rot in the soil, the ground is enriched by this store of nitrogen, rendered available for other crops. Vetches, therefore, like other *Leguminosæ,* are valuable for poor lands, where they grow readily, and for restoring nitrogen exhausted by grass-feeding plants. The American vetch (*Vicia americana*), with bluish flowers, grows in the moist soil of prairies and woodlands and is a valuable forage-plant for the West. *Vicia caroliniana* was highly regarded as a medicine by the Cherokee Indians, who used it for dyspepsia, cramp and rheumatic pains. Members of *Astragalus, Phaca* and allied genera, the American species of which are chiefly western or sub-arctic, are called milk vetches, from the notion that feeding upon them would increase the milk of goats.

Other leguminous plants known as vetches are the chickling vetch (*Lathyrus sativus*) grown in southern Europe for a forage-plant

and for its edible seeds, which are said, however to produce paralysis of the lower limbs in men and animals. Some of the bitter vetches are included in the same genus, but one is *Ervum ervilia*. The vetchlings are also included in *Lathyrus* (q.v.). The bastard hatchet-vetch is *Biserrula pelecinus*, with linear pods flattened transversely to the valve-edges, thus producing two sinuate false keels. The sensitive joint-vetch, *Æschynomene virginica*, has sensitive leaves, yellow flowers in axillary clusters and jointed pods. The kidney-vetch (*Anthyllis vulneraria*) has heads of flowers with permanent inflated calyces, in pairs at the ends of the branches; it was formerly supposed to have medicinal properties. The horse-shoe vetch (*Hippocrepis comosa*) has horse-shoe-shaped pods and is also called "unshoe the horse," from the magic property ascribed to it of taking the shoes off any nag that stepped upon it. Consult Farmers' Bulletins (United States Department of Agriculture).

VETERANS OF INDIAN WARS OF THE UNITED STATES, Society of, an organization formed at Philadelphia, 23 April 1896, by officers of the United States army, to keep in memory the hardships and heroism of the men who served in the Indian wars, which may now be regarded as of the past, and which had such an important and essential part in building up the States and Territories of the West. The society consists of three classes, the first composed of commisioned officers, active, retired or honorably discharged, of the United States army, or of any State National Guard or militia, who may have served or may hereafter serve in a strictly military capacity in a section occupied by hostile Indians. The second class consists of lineal male descendants of officers who were either members of or eligible to the first class. The third class is opened to non-commissioned officers and soldiers who have received a medal of honor or certificate of merit from the United States government for services in Indian wars, or who have been recommended for a commission, or specially mentioned by their immediate commanding officer for such services. The society is of course steadily diminishing.

VETERINARY MEDICINE. Veterinary medicine is the science and art that deals with the prevention, cure, alleviation and extermination of disease among domestic animals. It includes the appropriate management of domestic animals, as well as the nature, causes and treatment of the disorders to which they are subject.

History.— In Europe the first veterinary school was instituted in 1761 at Lyons; in 1776, that at Alfort, near Paris, was opened. Other veterinary schools were established in Europe as follows: Turin, 1769; Copenhagen, 1773; Vienna, 1775; Dresden, 1776; Hanover, 1778; Budapest, 1787; Berlin and Munich each one in 1790; London, 1792; and Madrid, 1793. In London, besides the older institution, now called the Royal Veterinary College, Camden-town, there was a second established at Bays-water in 1865. In 1844 the veterinary surgeons of Great Britain obtained a charter constituting them a corporation under the title of the Royal College of Veterinary Surgeons, and empowering them to appoint examiners and grant licenses or diplomas, the holders of which are members of this body (M.R.C.V.S.).

In the United States the first step toward systematic veterinary education was the granting of a charter in 1852 by the legislature of Pennsylvania and the securing of a subscription of $40,000 to serve in the organization of a veterinary school in Philadelphia. No students responded until 1859–60 when two were secured, one of whom was a graduate of the Boston Veterinary College which had been chartered in 1855. Both of these schools had a short life. Philadelphia, however, now has its veterinary school in connection with the University of Pennsylvania. In 1857 the New York College of Veterinary Surgeons was chartered and in 1875 the American Veterinary College was opened. These two New York City schools were maintained as proprietary institutions till 1899 when they were placed on a strictly university footing by consolidation under New York University. Their doors did not remain open long. In the succeeding years veterinary schools sprang into existence in many of the large cities, Chicago, Kansas City, Saint Joseph, Cincinnati, Baltimore, Washington, Grand Rapids, Detroit, etc. All of them were private institutions, dependent on their financial returns, with a curriculum of 10 or 12 months, representing two years of five or six months each.

On 7 Oct. 1868 Cornell University opened with a chair of veterinary medicine. Special courses of purely veterinary subjects were offered, and in the succeeding years four students received the Cornell degree of B.V.S. One of these organized the Bureau of Animal Industry in 1884 and for many years served as its head; another became director of United States Meat Inspection Service; another in conjunction with a later Cornell graduate demonstrated that the Southern cattle tick (*Margaropus annulatus*) was the carrier from beast to beast of the microbian cause (*Piroplasma bigeminum*) of Texas cattle fever — thus laying the foundation of the later discovery that one mosquito (*Anopheles*) carries the microbe of malaria, a second (*Stegomyia*) that of yellow fever, and a third (*Culex*) the blood parasite (*filaria*).

In 1894 by enactment of the New York State legislature the Cornell chair of veterinary medicine became the first State veterinary college in America. Other State veterinary colleges later were established in connection with State agricultural colleges in Ohio, Iowa, Washington, Kansas, Alabama, Colorado and Pennsylvania. A second New York State veterinary college was established at New York University in 1913.

The American Veterinary Medical Association in 1891 adopted an article providing that all applicants for membership should be graduates of a recognized veterinary school with a curriculum of at least three years of six months each and a corps of instructors comprising at least four veterinarians. Nearly all the schools which had not already done so soon placed themselves in harmony with these requirements. The next step in advance came in 1895 when the New York legislature enacted that at least a high school diploma representing four years of high school work should be offered for admission to a veterinary school,

that the veterinary curriculum should embrace three full years of nine months each, and that only those who had met both requirements could be admitted to the regents' veterinary examination for license to practice in the State. Veterinary colleges now require that a matriculant must be a graduate of an accredited high school having a four-year course of study. The American Veterinary Medical Association now requires that all applicants for membership must be graduates of a recognized veterinary school with a curriculum of four years of nine months each.

Army Service.— The United States army has long had its nominal veterinarians, but many of these were uneducated men, appointed by political influence or advanced from the position of farrier-major, and there was little to tempt professional men of character and ability into the service. The army veterinarian had practically no army status, no rights, no prospects. He was not even enlisted, there was no special provision for him during survice, and no pension if he had to retire disabled. In the session of Congress for 1900 the first step was taken for the improvement of the army veterinary service by enacting that the army veterinarian of the first grade must enter on the basis of an examination to be prescribed by the Secretary of War, and that he shall have the pay and allowances of a second lieutenant of cavalry, while those of the second grade shall have $75 a month and the allowances of a sergeant-major. To-day the military veterinarian, under the Military Defense Act of 3 June 1916 has an opening to advanced rank and nominal authority, a transfer from the Quartermaster's to the Medical Department with supervision and access at least to the medical mind in the military body. The requirements for the United States army veterinary service are that the applicant must be an American citizen between 21 and 35 years of age, a graduate of a recognized veterinary college, a person of good moral character, free from mental and physical defects, and satisfactorily pass an examination prescribed by the surgeon-general.

State Regulations.—The first law restricting the practice of veterinary medicine was enacted in New York in 1886. In 1901 12 States had veterinary medical laws. To-day each State has its Veterinary Examination Board which offers semi-annually an examination to graduates of recognized veterinary schools and issues a certificate of "veterinary surgeon" to those who pass the examination satisfactorily which permits the successful applicant to practise veterinary medicine legally within the State. Some States, especially those in which there is no recognized veterinary college, may recognize the license to practise granted by the Veterinary Examination Board of another State depending upon the need of veterinarians within the State and the opinion of the examining board.

Bureau of Animal Industry.— The Bureau of Animal Industry was established in 1884 in connection with the Department of Agriculture at Washington. The immediate cause of the formation of the Bureau was the urgent need by the Federal government of official information concerning the nature and prevalence of animal diseases, and of means required to control and eradicate them, and also the necessity of having an executive agency to carry out the measures necessary to stop the spread of disease and to prevent the importation of contagion into the country, as well as to conduct investigations through which further knowledge might be obtained. The Bureau deals with the investigation, control and eradication of contagious diseases of animals, the inspection and quarantine of livestock, horse breeding, experiments in feeding, diseases of poultry and the inspection of meat and dairy produce. It makes original investigations as to the nature, cause and prevention of communicable diseases of livestock, and takes measures for their repression, frequently in conjunction with State and Territorial authorities. It prepares tuberculin and mallein and supplies these substances free of charge to public health officers, conducts experiments with immunizing agents, and prepares vaccines, sera and antitoxins for the protection of animals against disease. It prepares and publishes reports of scientific investigations and treatises on various subjects relating to livestock. The effect of the work of the Bureau on the health and value of farm animals and their products is well known, and the people of the United States realize the immense importance of veterinary medicine.

Since 1884 veterinary medicine has made far more progress than during any previous period in its history. Every branch of veterinary science has shared in this advance. Pathology has made the most marked progress. Bacteriological study has discovered new diseases, changed the views held regarding many others, and has pointed the way to new methods of prevention and cure through the use of bacterins, vaccines, antiserums and bacterial toxins. Many diseases have been proved beyond a doubt to be due to infection by specific bacteria or germs. Some that may be mentioned are tuberculosis, anthrax, blackleg, glanders, tetanus, hog-cholera and rabies. In the United States veterinary medicine has gained distinction by the assistance and protection it affords to the livestock industry of the country. Contagious pleuropneumonia of cattle ravaged the herds of this country for 49 years and was finally exterminated in 1887 and has not appeared here since. Foot and mouth disease has invaded the herds of this country four times (1870, 1902, 1908 and 1914), and each time it has been successfully exterminated. Texas fever is rapidly disappearing from the South through the eradication of the Texas fever cattle tick. Hog-cholera, anthrax and blackleg are being successfully prevented by immunization of susceptible animals. Tuberculosis is being slowly eradicated through the operation of the Tuberculous-Free Accredited Herd Plan of the Federal government and legislative measures regarding cattle reacting to the tuberculin test. The annual physical examination of dairy cattle is also accomplishing much toward its eradication.

Veterinary medicine can offer much assistance in the study and prevention of the diseases to which the human family is susceptible. Some grave maladies of the human species are certainly derived from diseased animals such as rabies, glanders and anthrax. Food products derived from animals often serve as a medium by which serious maladies may gain wide distribution in the human family. Raw milk may

carry and distribute typhoid, septic sore-throat, diphtheria, smallpox and tuberculosis. Pork, if insufficiently cooked, may bring trichinosis and the tapeworm of man. Others may yet be added to the list. See CATTLE, DISEASES OF; HORSE, CARE AND DISEASES OF; VETERINARY OBSTETRICS; VETERINARY SURGERY; and consult bibliography under the last named.

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VETERINARY OBSTETRICS. Obstetrics is the art of assisting in parturition, or in the troubles incident to birth. The giving of birth to young is the culminating act of a series of complex physiological processes, the perversion or interruption of any one of which may lead to the defeat of reproduction. Some knowledge of each process is necessary in order to grasp the significance of parturition itself. Successful parturition occurs only when the prospective mother is normal in the structure and physiological development of all her organs of reproduction, and of others which may have an essential relation thereto; and the fetus must undergo a normal development before it can be born in a viable state. In veterinary obstetrics, therefore, is included all factors which necessarily precede and lead directly to parturition and all immediate consequences of birth which affect the health of the mother or the young. The reproductive organs of the female consist of the ovaries, uterus or womb, vagina, vulva and the mammary glands. Of the male they are the testicles and the penis. Their specific function is the procreation of the species, including impregnation, conception, the intra-uterine nutrition and development of the fetus, its expulsion after a certain degree of development and its further nutrition for a time after birth by milk from the mammary glands until the young has acquired sufficient development to enable it to lead a wholly independent existence. Before reproduction becomes possible the breeding animal must have reached the age of puberty or sexual maturity, the age at which ova and spermatozoa become mature and are discharged and sexual desire is established. Up to this age the reproductive organs are dormant in so far as their specific functions are concerned and no sexual desire is manifested.

The different species of domestic animals arrive at puberty or sexual maturity at various ages. The horse breeds at the age of two years, cattle at one to one and one-half years, sheep at 10 months to one year and the pig at seven to eight months of age. The rabbit breeds at six months of age.

Reproduction is a complex physiological process accompanied by or associated with phenomena which bear an important relation to each other. In the following order we may observe some of the processes: (1) estrum; (2) impregnation; (3) pregnancy; and (4) parturition.

Estrum or "heat" is that period of irresistible sexual desire which occurs in non-pregnant females at regular intervals. It is closely associated with a physiological process taking place in the ovary called ovulation, in which an ovum or egg cell is shed from the ovary to traverse the oviducts and then the uterus where, if copulation has taken place, the male cell (spermatozoan) and the female cell (ovum) unite, and the process of fertilization occurs. The estrual period and its interval in non-pregnant animals varies with the different species. In the mare the estrual period is 48 hours occurring at intervals of four weeks during the spring and early summer, becoming less frequent and more irregular during autumn and may be absent during the winter. Estrum in the cow is 24 to 36 hours and occurs every three weeks with considerable regularity. In the ewe the period of heat is 24 hours and recurs in from 13 to 18 (usually 16) days. The pig remains in a state of estrum for about three days and if not impregnated comes in heat again in three weeks. In carnivora estrum ordinarily occurs semi-annually in late winter and early autumn. The rabbit breeds from four to eight times a year. In all animals estrum is normally suspended during pregnancy, but exceptions to this rule may occur.

Impregnation.—Natural reproduction in animals can only occur as a result of copulation which is brought about as a result of estrum of the female and the corresponding sexual excitement of the male. During copulation the semen from the male is injected into the vagina of the female, possibly in part into the uterus. The essential condition to fertilization or impregnation, so far as the male is concerned, is that physiologically perfect spermatozoa shall gain the cervical canal, traverse the uterus and oviducts and meet the ovum. From among the myriads of spermatozoa in one discharge of semen, but one sperm cell is essential to the fertilization of an ovum. Fertilization or conception is the successful union of the male generative cell (spermatozoan) with the female generative cell (ovum), by which the resulting cell acquires the power of segmentation and is enabled to develop into an embryo.

Pregnancy or gestation is that period of time during which the fetus is undergoing development in the uterus of the mother, a period extending from the time of fertilization of the ovum until the birth of the young. The modifications which necessarily take place during this period are of a very profound character, and exert an important influence upon the life and nutritive powers of the mother. The volume of the uterus becomes greatly increased in order to accomodate the fetus and its membranes. Pregnancy is manifested in several ways by the female. However, no single sign observed should be considered diagnostic but when several of the indications are manifested and noted in conjunction the diagnosis of pregnancy may be made with certainty. The signs of pregnancy are: the cessation of estrum; a more quiet and peaceful disposition; a tendency to take on fat more rapidly; and the enlargement of the abdomen so that it bulges below and to each side. Further and more positive signs are: movements of the living fetus which may be observed in the flank and along the sides of the abdomen; touching or feeling the fetus through the walls of the flank; and auscultation of the fetal heart-beat. The earliest positive diagnosis of pregnancy may be made in the larger animals by palpation of the uterus through the rectum.

The duration of pregnancy or what is known as the period of gestation in domestic animals varies with the species. In the mare gestation is 330 to 340 days, in the cow 280 to 285 days, in the sheep and goat 21 to 22 weeks, in the pig 16 weeks, in the dog 9 weeks, in the cat about 60 days, and in the rabbit 30 days.

Parturition is the birth or expulsion of the living fetus at the natural time in a state of development which enables it to live. Although parturition is physiological it is accompanied by pain and severe exertion on the part of the mother and brings about sudden changes in the life of both mother and fetus which in a measure imperil the well-being of each. The causes of parturition are not definitely known. On nearing the completion of pregnancy there appear certain signs in animals which indicate the approach of birth. One of these is the increased functional activity of the milk glands; another is the relaxation of the sacro-sciatic ligaments which allows the muscles passing over them to drop inward; this causes deep hollows to appear on either side of the base of the tail; the vulvar lips become swollen and tend to stand apart more loosely than ordinarily. As the time for birth draws nearer the animal appears to be somewhat uneasy and anxious, and, if at liberty, she will withdraw from other animals of her kind or of other species and seek a quiet and secluded place. In parturition there are certain attitudes of the fetus which make its passage possible while others render it virtually impossible. The possibility of a fetus being born alive and without assistance depends fundamentally upon which parts of the fetal body present at the outlet, and secondarily upon the relations of the parts which present to the circumference of the pelvis. The natural and normal presentation is that of the two fore-feet with the front side of the feet and knees upward or next to the tail of the dam and the nose lying between the knees. With a well-formed dam and fetus and a normal presentation parturition in animals is usually prompt and easy. Whenever birth becomes difficult or impossible without artificial aid the condition is known as dystocia. It has been noted that dystocia runs parallel in frequency to the confinement of the animal. Consequently those females which are most closely housed and least exercised are the ones which suffer most frequently and seriously from dystocia. The immediate causes of the dystocia are many and varied. It may be dependent upon some defect, disease, or displacement of the maternal organs such as: failure of the mouth of the uterus to dilate; twisting or torsion of the uterus; tumors in the vagina; dropsy in the uterus or abdomen; undue narrowing of the passages; the disturbance of the animal by the presence of persons; or by unaccustomed and unnatural noises. Or it may be due to some disease or abnormality in the size, form, presentation or position of the fetus such as its back being turned downward or to one side in place of upward toward the spine of the dam; the bending backwards of one or more limbs or of the head into the body of the uterus; the presentation of the back, shoulder, or croup; the presentation of all four feet at once; dropsy or other disease of the fetus; or excessive or imperfect development of the fetus.

In overcoming dystocia in animals a number of operations may be demanded. Depending upon the animal in dystocia and the kind of dystocia present the operation for relief is selected to suit the case. The chief obstetric operations are: (1) Mutation, or changing the position of the fetus; (2) forced extraction; (3) embryotomy; (4) Cæsarian section. Mutation, forced extraction and embryotomy are most commonly performed in dystocia of the larger animals (mare, cow, sheep and goat). In the smaller animals (pig, dog and cat) Cæsarian section is performed. Pregnant animals are subject to an infectious disease which frequently destroys pregnancy. The disease is infectious abortion and consists in an infection of the fetus and its membranes which causes the death and expulsion of the fetus, or its expulsion in a living and enfeebled state at any time in the pregnancy period without directly inducing material evidence of disease in the mother.

There are also a few accidents and diseases grouped about the act of parturition which require great care and attention. They occur in all animals, although one or another accident or disease may be more frequent in one species than in another. Retention of the afterbirth is one of the most common and at the same time one of the most serious diseases of the puerperal state. It is observed most frequently in the cow. Rupture of the uterus may occur but is not frequent. Eversion or prolapse of the uterus is a common and formidable accident, especially liable to occur in cows. Metritis or inflammation of the uterus is common and occurs in all species. Parturient paresis or milk fever is a very common malady of the parturient state, but is observed only in cows. Present methods of treatment have made milk fever a disease not to be feared if attended early, where it was once a highly fatal malady. For bibliography consult works referred to under article VETERINARY SURGERY.

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VETERINARY SURGERY. Veterinary surgery is the art of healing local injuries and certain diseases of domestic animals by operative procedure and instrumental treatment. It includes also certain operations, that when performed render animals more submissive and more serviceable to man. Surgery in all countries is as old as human needs. A certain skill in arresting hemorrhage, the binding up of wounds, the supporting of broken limbs by splints, and the like, together with an instinctive reliance on the healing power of tissues, has been common to men everywhere. Veterinary surgery began in all probability with the domestication of the horse which occurred in Europe before the dawn of history. There is evidence that the Egyptians practised veterinary surgery in very remote times; but not until we turn to the Greeks do we obtain any very definite information regarding the state of veterinary surgical practice in antiquity. The writings of Hippocrates (460–377 B.C.) afford evidence of investigations in comparative pathology. Diocles of Carystus was one of the first to occupy himself with anatomy, which he studied in animals. Aristotle wrote on physiology and com-

parative anatomy, and on the maladies of animals, while many other Greek writers on veterinary medicine are cited or copied from by Varro, Columella and Galen. Mago of Carthage (200 B.C.) wrote a work of 28 books which was translated into Greek and largely used by Varro and Columella. Veterinary surgery in its progress has kept pace with human surgery because the principles of surgery wherever practised are the same. Every advance made in human medicine affects likewise the progress of veterinary science, and the invaluable investigations of Davaine, Pasteur, Chauveau, Lister and Koch have created as great a revolution in veterinary practice as in human practice. Veterinary surgery is limited somewhat in its application in practice as compared with the practical application of human surgery. This is due to the subservient purposes for which the domestic animals are reared and used, and to the insurmountable difficulties of diagnosis and post-operative control. The amount of care and attention given to the improvement of the physical condition and general health of domestic animals is measured by the knowledge the owner has acquired as to how his animals may be best fitted to serve his purpose. The amount of medical or surgical attention given an animal is measured by the cost in comparison with the results obtained. Perfect restoration of function being usually demanded in veterinary surgery, many operations common in human practice must either be renounced or very seldom performed. It is, therefore, often necessary to consider whether operation is justified or whether slaughter be not preferable.

Owners as a class have quite erroneous impressions of the results to be expected. Many are not satisfied even when the animal's usefulness is completely restored because perhaps a trifling blemish remains. Some seem incapable of understanding that a certain time is necessary for recovery. They imagine that healing can be forced, become impatient and in a few moments destroy by clumsy interference or too early use of the animal the results of weeks of skill, afterward seeking to hold the operator answerable. In veterinary surgery the conditions for rapid healing are much less favorable than in human practice. The veterinary surgeon is handicapped in his operative work by the active opposition of the animal, the natural uncleanliness of the patient's body, the unsatisfactory surroundings in which the operation must ofttimes be performed and the hazards of anæsthesia. And he is finally hampered in his post-operative management of the case by the lack of any instinct of self-care or self-protection on the part of the patient, the difficulties of post-operative control, and frequently, the impossibility of shielding the wound from injurious external influences and the great cost of sustenance and proper care during long periods of convalescence. These limitations to veterinary surgery often render success imperfect even with the greatest care and attention to detail and are so harmful against the enlargement of the scope of veterinary surgery that there has never been a demand for the specialist from whom an elaboration of veterinary surgical knowledge should come. On the contrary every veterinary practitioner must be more or less of a surgeon himself in order to meet the demands of his daily work, and since his mind is occupied in so many different directions he finds little time to enrich the fund of surgical knowledge by fruitful investigations and research. He finds little opportunity to acquire that knowledge of detail, that degree of skill, that practical experience upon which a successful surgical career actually depends. And unlike the human physician he is denied the opportunity of consultations with the convenient specialist who by reason of a broad experience is capable of performing complicated and intricate operations against diseases which the general practitioner cannot hope even to diagnose, to prognosticate or meddle with because such specialists do not exist in the veterinary profession.

There are a few men who stand out rather conspicuously as veterinary surgeons and there are a few teachers in the various veterinary colleges who profess to be endowed with a superior variety of surgical skill but still it cannot be said that the ranks are richly embellished with real surgeons.

Although many of the domestic animals undergo necessary surgical operations the horse has furnished by far the largest field for the development and application of veterinary surgery because up to the beginning of the 20th century all agricultural pursuits and the local transportation of people, manufactured articles and farm products were done by means of horses. This necessitated great numbers of horses in every occupation. To-day the tractor and the automobile have made such enormous inroads into our commercial and agricultural transactions that the work for the horse has all but gone, and consequently the horse has disappeared in great numbers from the cities and farms, thus very greatly diminishing the opportunities and the field for the practice of veterinary surgery in the future. Nevertheless, a high degree of skill has been attained in the application of veterinary surgery when judged by the various operations that may be performed upon the horse for the restoration of his usefulness. In surgical practice the indications and contra-indications for operation must be carefully studied. Except in case of urgent operations like tracheotomy for threatening suffocation, operation for strangulated hernia, removal of a foreign body, arrest of severe hemorrhage, dressing of a wound, etc., it is first necessary carefully to consider whether the animal's value, its chance of perfect recovery and the probable duration of its convalescence justify operation at all. When surgical treatment can only have a temporary good effect and the disease is likely to return, when improvement is only to be obtained by sacrificing the animal's usefulness, or when the patient is old or its strength is too greatly reduced the operation should not be performed except on the insistence of the owner.

Surgical Procedure.— This includes (1) the restraint of the animal; (2) anæsthesia; (3) obtaining surgical cleanliness, and (4) the dressing and care of wounds. *Restraint.*— Efficient restraint is a prerequisite to good animal surgery. Operation, or even local examination, is often impossible without recourse to methods of restraint of which an exceedingly numerous choice is available. Each species of the

domestic animals is endowed with one or more means or weapons of defense. These must be reckoned with and overcome by effectual means. The animal must be rendered harmless and at the same time the operative area must be made immovable and secure. Surgical restraint methods begin with subjection by means of blinds, twitches, gags, war bridles and barnacles. These appliances are used to divert the animal's attention while injuries, diseased areas or wounds are being examined, operated or dressed. They are also used while the hobbles or casting harnesses are being applied. The method of restraint used depends upon the size and strength of the patient, the part to be operated upon and the operation to be performed. Large animals are cast and secured in the recumbent position by means of harnesses with hobbles and ropes for serious operation and preparatory to administering an anæsthetic. Veterinary colleges and veterinary hospitals are usually equipped with stocks and operating tables where large animals may be securely confined for operation in the standing or in the recumbent position as desired. The smaller animals (sheep, swine, dogs and cats) are restrained for operation by tying all four limbs together or by securing them to an improvised operating table. If not too large and strong they may be held firmly by a powerful assistant.

Anæsthesia.—According to its nature and extent anesthesia may be general or local. In general anæsthesia the patient is thrown into a more or less profound artificial sleep. It is not always necessary, however, to act on the entire individual. Sometimes the operation affects only a very limited area and local anæsthesia suffices. Local anæsthesia may be produced by the application of ice or freezing mixtures, by spraying the part with certain liquids like ether or ethyl chloride, or by the subcutaneous injection of a solution of cocaine, eucaine, stovaine, quinine and urea hydrochloride or procaine. Anæsthetics are quite as useful in animals as in man, and few important operations are performed on veterinary patients without anæsthesia, either local or general. For most minor operations the methods of restraint are sufficient, but certain operations cannot be well performed without general anæsthesia. In reduction of hernia, delivery in cases of dystocia, in laparotomy and in all cases where one works in dangerous proximity to important organs, the animal's struggles render general anæsthesia indispensable. It is also necessary for delicate operations on or near the eye, and for all serious operations on horses. In ruminants, anæsthetics are seldom used except in case of difficult parturition because the ruminant does not withstand anæsthesia well. In carnivora, especially the dog, its principal indications are in laparotomy, dystocia, amputation and certain operations on the head. General anæsthesia is the result of a special action exerted directly on nerve centres by the anæsthetic agent. General anæsthetics may be administered by the respiratory tract through inhalation of their vapors or by injection intravenously or subcutaneously or by administration through the mouth and digestive tract. Anæsthetics administered by the respiratory tract produce a series of phenomena in the following order: (1) A period of excitation; (2) a period of anæsthesia, or surgical period; (3) a period of collapse or intoxication. For horses, the best anæsthetic is chloroform inhaled. For cattle chloral hydrate, whisky, brandy or rum administered by the mouth is the best. For sheep, goats and swine chloroform is best, and for dogs and cats morphine injected subcutaneously followed by inhalations of a mixture of ether and chloroform should be used.

Local anæsthesia is the result of the action exerted upon the nerves in the area in which the agent is injected. Areas or parts may be anæsthetized for operation by the injection of a local anesthetic into the area to be operated, or by injecting the agent along the tract of the nerve supplying the part. Local anæsthesia may also be produced by infiltration or by producing an artificial edema in the region of the operation.

Surgical Cleanliness.—The surgeon's most formidable adversary is wound infection caused by the invasion of wounds with pathogenic bacteria which sooner or later develop and multiply, and by their activity or their products set up irritation of the tissues, inflammation, suppuration and, in certain cases, general infection of the body. Antisepsis and asepsis are two terms used to describe the method of treatment and care of wounds, accidental or operative, as regards the bringing about of that condition known as surgical cleanliness or freedom from any of the pathogenic or wound-infecting germs. Antisepsis is that process by which infective germs are carried away and excluded from the wound, while asepsis is freedom from infective germs. In veterinary surgery asepsis will probably never obtain the same favor as antisepsis on account of the natural uncleanliness of the skin of animals, the condition of their environments and the difficulties of post-operative control. Strictly considered, however, antisepsis and asepsis do not stand in opposition, but rather form mutual complements of each other; aseptic methods being preventive, antiseptic curative, their association is often advantageous. Antisepsis is resorted to when the region of operation includes a suppurating wound, a fistula or an ulcer or an infected wound. Antiseptics are then employed to disinfect the seat of operation, the hands, the instruments and the dressing materials.

The aseptic method is applicable to operations upon healthy or infection-free tissues. Antisepsis is preferable in veterinary surgery on account of the chances of the wound, the hands and the instruments becoming infected during the operation. For disinfecting the seat of operation and the hands, chemical antiseptics are employed. Instruments, ligatures, drainage tubes and other materials used for dressing wounds are sterilized by being subjected to the action of boiling water, glycerine, heated oil or to a high degree of dry heat.

Some of the antiseptics most used are iodine, iodoform, potassium permanganate, carbolic acid, lysol, bichloride and biniodide of mercury, boric acid, chlorazene and dichloramine-T.

The operator's hands are not infrequently the means of infecting wounds, and the surgeon who desires to avoid after-complications will take especial care in the disinfection of his

hands. The spaces beneath the nails, the folds of skin at their base, the folds of the skin itself and the orifices of the skin glands are all refuges for microbes, to destroy which demands the most minute precaution. In veterinary surgery the precautions taken extend to thoroughly cleansing the nails, washing the hands with hot water and soap and thoroughly rubbing them with 1 in 1,000 sublimate solution. The hands should be rendered aseptic and kept aseptic throughout the operation. For this reason the operator should avoid touching the skin surrounding the point of operation, the table, the straw or any object which has not been disinfected.

The field of operation and surrounding parts should be most carefully cleansed. In all animals the skin is covered with extremely numerous and varied micro-organisms among which staphylococci are particularly abundant. It is, therefore, always important to disinfect the parts. If the skin is healthy, the hair is removed with scissors or a clipper, the parts thoroughly soaped, shaved, scrubbed and washed with clean water. After being dried, the parts are rubbed with ether or gasoline to remove fatty materials from the surface and are finally douched or painted with tincture of iodine. This method, however, is not applicable to all surfaces. The mucous membranes require the application of mild antiseptics and irrigation, while the foot requires paring and continued soaking in a strong antiseptic for several hours.

Surgical Dressing of Wounds.—Wounds, operative or accidental, require in dressing and treatment (1) the control of hemorrhage; (2) to be placed in a position of rest, and (3) adequate provision against infection. Hemorrhage is controlled by the application of thermic agents (heat or cold), chemical agents (styptics) and surgical methods. The surgical methods of controlling or arresting hemorrhage are represented by the tourniquet, Esmarch's bandage and the rubber cord, by compression, ligation, torsion, forcipressure and acupressure. Placing the wound in a position of rest in domestic animals is ofttimes a difficult task. It signifies the fixation of the margins of the wound in apposition, or the fixation of the part in which the wound has occurred. The margins of the wound are fixed by means of sutures and bandages, and the fixation of the part is accomplished by the confinement of the animal to as little freedom of movement as possible.

All wounds must be scrupulously guarded against infection. Aseptic wounds should be closed by suturing and protected with a dressing of sterile cotton applied and kept in place by bandages. If bandages cannot be applied the wound must be protected by the confinement of the animal in a clean and sanitary environment, and the application of antiseptics in the form of dusting powders, healing oils or irrigation. Infected wounds must be thoroughly cleansed of all foreign material and necrotic tissue, provided with free drainage and frequent irrigation with antiseptics.

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VETHAKE, Henry, American educator: b. Demerara, 1792; d. 17 Dec. 1866. Coming to the United States with his parents he entered Columbia College, New York, where he was graduated in 1808, and studied law. In 1813 he became teacher of mathematics at Columbia and the same year was made professor of mathematics and natural philosophy in Rutgers (then Queen's) College. From 1817 to 1821 he held a similar chair at Princeton; from 1821 to 1829 at Dickinson College and in 1832–35 at the University of the City of New York. He then was for a year president of Washington College, Lexington, Va. He was professor of mathematics from 1836 to 1855 and in 1855–59 was professor of intellectual and moral philosophy in the University of Pennsylvania; and was chosen vice-provost in 1846 and provost in 1854. From 1859 until his death he was professor of higher mathematics in the Philadelphia Polytechnic College. He published 'Principles of

Political Economy,' and edited McCulloch's 'Dictionary of Commerce.'

VETILLART, vā-tē-yär, **Marie Michel Henri,** French civil engineer: b. Le Mans, France, 5 Sept. 1848. He was educated at the Ecole Polytechnique and the Ecole de Ponts et Chaussées, Paris, and in 1875–86 was resident engineer of the port and canals of Calais. In 1886–92 he was engineer-in-chief of the ports of Boulogne and Calais and has since occupied that position at Havre and the ports on the Seine. The new port of Calais, the improvement of the Calais Canal and the completion of the Boulogne breakwater are among his more notable works, while to him may also be credited the first use of the water-jet for sinking the foundations of large piers and lock walls. He was a delegate to the International Maritime Congress at Washington in 1889. His writings include 'Fonçage des Pieux par Injection d'Eau' (1877); 'Fondations en Terrains de Sable des quais et Ecluses du Port de Calais' (1889); 'La Navigation aux Etats-Unis' (1892); in collaboration with Quinette de Rochemont, 'Les Ports Maritimes de l'Amerique du Nord sur l'Atlantique' (1902), etc.

VETIVER, the rhizome and rootlets of the cuscus-grass (*Andropogon squarrosus*), of India, which, when dried, is light yellowish-brown in color, aromatic, balsamic and persistent in odor, suggesting sandalwood or myrrh. It is a tonic and stimulant drug, but is chiefly used as a source of vetiver oil, an ingredient in perfumery. The fibre of the grass is woven into fragrant baskets and matting, which curtains house-openings, during the hot season of India, and is always kept wet.

VETO, *in political science,* the right of the executive to disapprove an act or resolution of the legislature. It may be absolute as in England, or qualified as in the United States, where the disapproval of the executive may be overridden by an extraordinary majority of the legislature, or suspensive as in France, where the veto merely works a suspension of the law until repassed by the legislature by an ordinary majority. In England the veto is a remnant of the more extensive legislative power formerly exercised by the sovereign, but which has been gradually cut down until only the negative power of disapproval is left. Since 1708 the right has never been exercised and the commentator Bagehot goes so far as to say that the sovereign would be bound to sign his own death warrant if the two houses of Parliament should send it to him. But the better opinion is that a royal prerogative is never lost by non-user and, therefore, the royal veto power still exists unimpaired, although the system of responsible cabinet government makes its use out of place. In the English colonies of America, except Maryland, Rhode Island and Connecticut, the royal veto was frequently employed in a manner to call out the strong protests of the colonies, and this abuse was one of the well-known counts in the indictment against the British king contained in the Declaration of Independence. None of the revolutionary State constitutions except Massachusetts gave the executive even a qualified veto, nor was any provision for such a power made in the Articles of Confederation. The advantages of a qualified veto, as a check upon hasty and ill-considered legislation, however, appealed to the framers of the Federal Constitution, and it was provided in Article I, Section 7, that every bill which shall have passed both House of Congress shall be presented to the President for his approval, but if disapproved by him it shall be returned with his objections to the House in which it shall have originated. It is made obligatory upon the House to enter the objections upon the journal and proceed to reconsider the bill. If repassed by two-thirds of both houses by a yea and nay vote it becomes law in spite of the executive disapproval. If the bill is retained by the President for a period of 10 days (Sundays excepted) it becomes law without his signature unless the adjournment of Congress in the meantime prevents its return. This last proviso in effect gives the President an absolute veto on all bills passed during the last 10 days of the session since he has only to retain them in order to nullify them. This potent weapon is known as the "pocket veto" and was first extensively employed by President Jackson, who defeated in this way Clay's bill for the distribution among the States of the proceeds from the sale of the public lands. The veto power was used rather sparingly by the earlier Presidents. Washington vetoed two, Jefferson and the two Adamses none, Madison six and Monroe one. The most extensive use of the veto was made by Jackson, who vetoed 12 bills, by Tyler and Pierce who vetoed nine each, by Grant who vetoed 43, by Johnson who vetoed 21 and by Cleveland who vetoed 301 during his first term. Most of those vetoed by Cleveland, however, were private pension bills of little importance. Among the more important measures which have been killed by the executive disapproval were the bank bill and the internal improvement bill vetoed by Jackson, the two bank bills vetoed by Tyler, the Freedmen's Bureau, Civil Rights and Reconstruction bills vetoed by Johnson, the Inflation bill and the bill to reduce the President's salary from $50,000 to $25,000 vetoed by Grant, the silver coinage bill vetoed by Hayes and the Immigration bill vetoed by Cleveland. Until Pierce's administration but one bill was passed over the executive veto, the exception being a tariff bill vetoed by Tyler. Five were passd over Pierce's veto, 4 over Grant's and 15 over Johnson's. No bills became law by the operation of the 10-day rule until Buchanan's administration. During Grant's two terms 136 bills became law by this rule, 18 during Johnson's term, 13 during Arthur's and 283 during Cleveland's first term.

Among the precedents which have grown up in connection with the exercise of the veto power are: that the President has no power to veto a resolution proposing an amendment to the Constitution; that he cannot veto a bill without stating his objections thereto; that he cannot recall a veto, although this was done on one occasion by Grant; and that the two-thirds of both Houses required to override the veto means two-thirds of those present, and not two-thirds of all members composing the two Houses. An oft-suggested amendment to the Constitution is the proposal to empower the President to veto particular items in appropria-

tion bills. This would enable the executive to eliminate objectionable "riders" from important appropriation bills. At the present time all the State executives except that of Rhode Island are allowed a qualified veto over the acts of the legislature. Not until 1902 were the executives of North Carolina and Ohio given this power. In four States (Vermont, Connecticut, New Jersey and Indiana) it includes only the right to demand reconsideration. In 27 States the veto may be overridden by two-thirds, either of the members present or elected; in three States, by three-fifths; and in the others, by a majority of those elected. In a considerable number the executive is empowered to veto any item of an appropriation bill, and in a few, any section of other bills. See ACTS OF CONGRESS; BILLS, COURSE OF; EXECUTIVE. Consult Mason, 'The Veto Power' (1890); Wyman and Sherwood, 'Veto Power in the several States' (1907).

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VEUILLOT, vē-yō, **Louis,** French author; b. Boynes, France, 11 Oct. 1813; d. Paris, 7 April 1883. He was of humble origin and began his journalistic career in 1832, having obtained a position on one of the ministerial provincial papers. He rose from one position to another until in 1843 he became editor of *L'Univers Religieux.* He visited Rome in 1838 and, influenced by the impressive religious services of Holy Week, became an ultramontanist in his opinions, his conversion resulting in a series of religious romances, among which are 'Pierre Saintine' (1840); 'L'Honnête Femme' (1844), etc. Among his other writings are 'Les Pélerinages de Suisse' (1838); 'Les Libres penseurs' (1848); 'Les Odeurs de Paris' (1866); 'Poetic Works' (1878), etc. He was the most uncompromising French ultramontanist of his day. Consult biographies by E. Veuillot (1883), and Cornut (1891).

VEVAY, vē-vā', Ind., city, county-seat of Switzerland County, on the Ohio River, about midway, following the course of the river, between Louisville, Ky., and Cincinnati, Ohio. It has steamboat connections with all the Ohio River ports. It is in a fertile agricultural region in which the chief products are fruit, tobacco and grain. The manufactures are flour, furniture, brick, tobacco and lumber and dairy products. The place was settled in 1805 by a colony from near Vevay, Switzerland; in 1813 it was laid out and in 1877 was chartered as a city. Pop. 1,256.

VEVEY, or **VEVAY,** Switzerland, a town in the canton Vaud, beautifully situated at the northeast margin of the Lake of Geneva, 11 miles east-southeast of Lausanne. The beauty of the town and neighborhood attracts many foreign residents and it has interesting literary associations in connection with Rousseau's 'Nouvelle Héloïse.' Pop. 17,500.

VEXILLA REGIS PRODEUNT ("Behold the banners of the King"), the first line of a "world-famous hymn," written by Vanantius Fortunatus at the time when he was living at Poitiers. Radegunda, queen of the Franks, who was living in the monastery which she had founded at that place, had obtained from Emperor Justin I a fragment of the True Cross for her monastery, and the relic was forwarded to her by way of Tours in charge of the bishop of that place. Fortunatus headed Radegunda's deputation to meet the bishop's procession and chanted this hymn to salute the relic's arrival (19 Nov. 569). The word "vexilla" has received many symbolical interpretations, the best of which is perhaps that of Kayser, namely, that the eagle of the old Roman cavalry standard has been supplanted by the cross and corresponding changes made in the banner. The hymn originally contained eight stanzas, but the correctors of the Breviary under Urban VIII revised it entirely, making changes and substitutions which in general are not liked by hymnologists. The Vatican Graduale (1908), however, preserves the original text, although the Antiphonary (1912) gives only the revised text. The hymn is sung in the procession on Good Friday when the Blessed Sacrament is carried from the Repository to the High Altar, but its principal use is in the Divine Office, the Roman Breviary assigning it to Vespers from Saturday before Passion Sunday daily to Maundy Thursday, and to Vespers on the feasts of the Holy Cross. There are at least 40 English translations (consult the 'Dictionary of Hymnology') of the 'Vexilla Regis,' notably by Blount, by Bagshawe, by Donahoe and by Neale, the latter's being one of the best known. A fine translation, preserving the metre of the original, was published with the Latin text and historical and exegetical comments by Hugh T. Henry in the *American Ecclesiastical Review* (March 1891). The text with critical and theological notes is also to be found in S. G. Pimont, 'Les Hymnes du Bréviaire Romain' (Paris 1884).

HERBERT F. WRIGHT.

VIA DOLOROSA (Latin, "sorrowful way"), the name of a narrow tortuous street of Jerusalem, supposed to be part of the route on which Jesus carried his cross to Calvary. There are 14 stations marked by tablets. The name appears to have been bestowed in the Middle Ages and is founded on a rather doubtful tradition. The Way of the Cross, a form of devotion in the Catholic Church, is in commemoration of that dolorous journey of the Savior. It consists in prayer and meditation successively before each of the 14 tablets ("Stations") familiar in all Catholic churches, and which represent incidents in the journey of Jesus from the place of judgment to the Hill of Calvary.

VIA MALA, a remarkable defile or crevasse in the canton of Grisons, Switzerland, a portion of the Hinterrheinthal between Thusis and Zillis. The sides of the clett, which is about two miles in length, are immense walls of rock, almost parallel, and so hard that the disintegrating influence of the elements appears to have little effect on them, each projection on one side corresponding to an indentation on the other, almost as perfectly as at the time they were separated. The walls have a maximum height of about 1,600 feet, and at various parts of the defile are not more than 30 feet apart at the top. The first part of this defile was long deemed inaccessible, and had received the name of the Lost Gulf, but in the early part of the 19th century a magnificent road was constructed

through the Via Mala, 400 to 600 feet above the river, by blasting and cutting a "notch" in the side of the rock. The road is necessarily steep and narrow, crosses from side to side by three bridges, and is protected from falling stones and trees by a canopy of rock overhead here, and by a wooden roofing there. So narrow is the crevasse in some places that fallen trunks and stones are sometimes wedged in between its sides above the ordinary water-level; and on the occasion of the great flood of 1834, the river, generally 400 feet below the second bridge, rose to within a few feet of it, and carried off the upper bridge.

VIADUCT. See BRIDGE.

VIARDOT, Louis, loo-ē vē-ār'dō, French art critic: b. Dijon, 31 July 1800; d. Paris, 5 May 1883. He studied law in Paris, entered journalism and was manager of the Theatre Italien, 1831–41. In the last-named year he founded with George Sand and Pierre Leroux the *Revue Indépendante*. He wrote 'History of the Arabs and Moors of Spain' (1851); 'The Traditional Rise of Modern Painting in Italy (1840); 'The Museums of France' (1855); 'Spain and the Fine Arts' (1866); 'Wonders of Painting' (1868–69).

VIARDOT-GARCIA, vē-ār-dō gär-thē'ä, **Michelle Pauline,** French opera singer, daughter of Manuel Garcia (q.v.) and sister of Maria Félicité Malibran (q.v.): b. Paris, 18 July 1821; d. 1910. She traveled extensively with her parents and in 1839 made her début at London, playing in 'Otello' and in 'La Cenerentola.' She was married to Louis Viardot (q.v.) in 1840, but continued her operatic career until 1862 when she retired. She appeared in the great European cities with continued success throughout her stage life; created the parts of "Valentine" in 'Les Huguenots' and of "Fidés" in 'Le Prophète,' her voice, a mezzo-soprano of three octaves, enabling her to make an artistic triumph presentation of the rôles; and after her retirement from the stage she engaged as a vocal teacher and in composition, in which her work is of importance. It includes the operettas 'Le Dernier Sorcier' (1867); 'Trop de Femmes' (1869), etc., in addition to about 60 vocal melodies and other compositions.

VIATICUM, a Latin word originally meaning provision for a journey of some distinguished person traveling on business for the state. The usage has been extended in the Roman Catholic Church to signify the Eucharist administered to patients beyond hope of recovery.

VIATKA, vē-ät'kä, Russia. See VYATKA.

VIAUD, Louis Marie Julien. See LOTI, PIERRE.

VIBERT, Jean Georges, zhŏń zhōrzh vē-bār, French painter: b. Paris, 30 Sept. 1840; d. there, 28 July 1902. He studied under Barrias and Picot and exhibited at the Salon for the first time in 1863. His work was chiefly in oils, but he also possessed great skill in water-colors. His drawing was carefully accurate and he excelled as a technician, but his work is frequently marred by crude coloring. He founded the Société des Aquarallistes Français, was awarded medals at the Salon in 1864–67–68 and in 1882 became an officer of the Legion of Honor. Among his best-known works are 'Gulliver' (1870); 'The Grasshopper and the Ant' (1875); Monseigneur's 'Antechamber' (1876); 'Apotheosis of M. Thiers' (1878), etc. He wrote 'La Science de la peinture' (1891). There are four good examples of this artist in the New York Metropolitan Museum of Art.

VIBORG, vē'bŏrg, Finland. See WIBORG.

VIBRATION, the limited reciprocal or oscillatory motion of the particles of an elastic body or medium, in alternately opposite directions from their positions of rest or equilibrium. A complete vibration comprises a motion to and fro, but some French physicists measure it as a motion to or fro; hence the latter is one-half of the former. When vibrations are comparatively slow they are known as oscillations, the term vibration being reserved for all the rapid reciprocal motions beyond the ability of the eye to follow. In rods or strings vibrations are distinguished as transverse, or longitudinal. The rate of transverse vibrations in rods is inversely proportional to the square of the length of the rod. When fixed at both ends, a rod vibrates in the same manner as a stretched string. When fixed at one end only it vibrates either as a whole or in segments. When bent into a U-shape, as is the case in the tuning fork, the rod divides into three vibrating parts by two nodes near the base. The vibration of plates and discs has been extensively investigated, as in the manufacture of diaphragms for telephones, phonographs, etc. For the laws governing these vibrations see textbooks in physics (sound). A vibrating bell follows the same law as a disc. The rate of vibration is directly proportional to the thickness and inversely proportional to the square of the diameter. Rods vibrate longitudinally, either as a whole or in proportion to the numbers, 2, 3, 4, etc. At the points of maximum vibration a rod suffers no change of density. Enclosed columns of air vibrate longitudinally, by alternate condensations and rarefactions. Free vibrations in air or gases proceed in straight lines from the point of disturbance. Forced vibrations, or vibrations modified by one another, or some other influence, produce circular or elliptical revolutions of the particles of the liquid or medium disturbed. The eye does not note vibrations more rapid than about 20 to 40 per second, and the moving picture photographers take advantage of this, showing usually about 20 pictures per second, which appear as one picture, with moving figures. In music, 16 per second is the lowest vibration the ear can note and 41,000 per second the highest. Our senses do not appreciate the vibrations above this until we come to a frequency of 370 million million when we begin to see rays of ultra red light. Beyond 833 million million vibrations the highest light, the ultra violet, begins to disappear. Another class of vibrations we recognize as electricity, another class as X-rays, another as N-rays, another as the medium through which wireless telegraphy takes place, and so on. Everything in nature vibrates; everything has its rate of vibration. Heat is a matter of vibration; where there is utter lack of vibration we attain the theoretical absolute zero, for with all absence of motion there can be no heat. What limit there may be to

higher vibrations is not known, but it is claimed by oculists that the phenomena of Spiritualism, of telepathy and everything pertaining to a higher existence takes place within vibrations immensely higher than those we commonly experience and know about. The amplitude of a vibration is the maximum displacement of the vibrating particle. The phase of a vibration is any designated portion of this displacement. The laws of vibration are the basis of modern theories regarding sound, heat, light and electricity. See these subjects as well as WAVES AND WAVE MOTION.

VIBROSCOPE, an instrument invented by Duhamel for recording the vibrations of a tuning fork, by means of an attached style on a piece of smoked paper gummed around a cylinder. The fork is made to vibrate and the cylinder turned, the style making a mark whose waves correspond to the number of vibrations in a second.

VIBURNUM, a large genus of shrubs, or small trees, of the honeysuckle family, indigenous chiefly to the north temperate zone. Many species are cultivated for their ornamental flowers and fruits. The branches and leaves are usually opposite, the latter never being compound, but are diversely toothed and lobed, and generally assume brilliant hues in autumn. Viburnums are easily grown, but generally prefer a moist soil and sunny position, most of the American species living at the edges of open woodland. The most conspicuous of the genus both in flower and fruit are *V. opulus, V. tomentosum* and *V. alnifolium.* The two former are the source of the garden snowballs (q.v.). Among the American viburnums is the oval-leaved *V. dentatum,* or arrow-wood, so called because the Indians made arrow-shafts out of its soft, light wood, as well as from that of several other species, such as *V. molle. V. lentago* is the sweet viburnum, sheep-berry or nanny-berry, an arborescent shrub keeping its oval, bluish-black drupes over winter. These fruits have a thin pulp and are edible, and although somewhat insipid are said to be palatable after having been frozen. *V. cassinoides* is the early-flowering withe-rod, with gray ascending branches. Its leathery, rather dull-green, ovate leaves are sometimes used for what is called Appalachian tea. One of the commonest northeastern viburnums is the maple-leaved, or dock-mackie (*V. acerifolium*), a pretty, spreading shrub growing under trees, with creamy plate-like cymes of flowers, fruits changing from red to dark blue, three-lobed maple-like leaves, which are downy beneath and assume dark purple shades in the fall. The thin bark of root and stem of the black haw (*V. prunifolium*) yields a diuretic and tonic drug. This shrub forms thickets with dense foliage, composed of finely serrulate, small, oval leaves, and bears numerous clusters of flowers, succeeded by blue-black and glaucous drupes.

The small "wayfaring tree" of Europe (*V. lantana*) is often cultivated and has elliptic foliage and bright-blue fruits, darkening to black. They are sweetish, mealy and mucilaginous, and are said to have been used as a remedy for diarrhœa and catarrh, and also for an ink. An inferior birdlime is extracted from the roots, and the acrid inner bark was used as a vesicant. The young shoots furnish stems for tobacco-pipes. The American wayfaring tree is the hobble-bush (*V. alnifolium*), with leaves that are nearly orbicular and turn to a deep wine-red in autumn, and handsome flowers having large, sterile ray-florets. It has long, flexuous, reddish branches, which are decumbent and are constantly tripping up pedestrians in the shady woods which it frequents. This fact explains the popular name. The American wayfaring tree is a companion of the white-rod except in its northerly quarters.

VICAR (from Latin *vicarius,* substituted, delegated), a representative, a vicegerent. The Pope of Rome is called by Roman Catholics the "vicar of Christ on earth." A vicar-apostolic was formerly a bishop or archbishop of the Roman Catholic Church to whom the Pope delegated some of his jurisdiction, but the term now denotes a titular bishop in a country where episcopal sees have not yet been established, or where the succession has been interrupted. A vicar-forane is a priest appointed by a bishop to exercise a limited jurisdiction in a particular town or district. A bishop may appoint one or more vicars-general to assist him in the work of his diocese. A vicar-capitular is elected by the chapter of a diocese during the vacancy of the see, to hold the place of the bishop.

The term "vicar" as applied to a clergyman in charge of a parish originated in the appointment by religious corporations of a priest to perform the pastoral duties of some benefice which had become their property. When the properties of the religious houses were transferred to lay possession under Henry VIII the vicar became the deputy or religious representative of the lay proprietor of the benefice, and his stipend was at the discretion of such proprietor. The vicar was and is inferior to the rector who has both the parsonage and the tithes. Parochial vicars are either perpetual, as in parishes, or temporary, the appointment of the latter being recalled at pleasure, or after a fixed time. In the Roman Catholic Church the designation is sometimes given in Europe to the assistant priest of a parish.

VICAR OF WAKEFIELD, The. 'The Vicar of Wakefield; a Tale' by Oliver Goldsmith seems to have been begun during the year 1761 and was sold to a publisher in October of the following year, but it remained in manuscript nearly four years, finally coming out in March 1766, when its author, thanks to 'The Traveler' (1764), was a more famous man than he had been in 1762. The 'Vicar' promptly became an English — and then a European — classic. Goethe thought it one of the best novels ever written. A similar opinion has been agreed in by a long line of notable critics, even when so diverse as Henry James and Joel Chandler Harris. For the most part the book's charm resists analysis, but much can be ascribed to the mingled gayety and tenderness with which Goldsmith therein recounts his own experiences. It is not merely that in the 20th chapter George Primrose, the "philosophic vagabond," claims adventures on the Continent which Goldsmith himself had had during his travels; nor that the Vicar is studied in many respects from Goldsmith's father. It is rather that the characters so

often give utterance to Goldsmith's own mellow doctrines, and that the incidents so often reflect his fresh and benign observations of life. Many passages fail to rise above conventional 18th-century prejudices: pretty notions about the state of nature and the natural man abound; the political ideas advanced are as often as not simply incredible; while the attitude of the Primrose family toward Sir William Thornhill is of a snobbishness at which one cannot help wincing. Such matters must be classed with the "hundred faults" which Goldsmith admitted "are in this Thing." Doubtless he meant by "faults" quite different matters, such as a certain aimlessness of structure and the absence of a high decorum, but these, if not now held to be actually the book's virtues, are yet understood to contribute to its principal charm — its easy movement of idyllic events recorded in language felicitously naïve. The scene has, indeed, almost no "locality"; the purpose obtrudes itself everywhere; the plot skirts melodrama at a dozen places; not a few of the characters hint of the stage. The total effect, however, is of a reality which will not fade. Who that has read the story can possibly forget Moses' purchase of the green spectacles or the family portrait which was too large to be hung? The tale is full of such episodes, as memorable as proverbs. Few books of the length present such a variety of life and such a sum of unsoured human wisdom. Perhaps its greatest triumph is that it reveals the most artless simplicity and virtue without either making fun of them or forgetting that the world at large is less apostolic than the Vicar's little realm. Irony, so rarely in the service of kindness, is here merely a method employed by one of the gentlest, best and quaintest of men in a novel which is as sincere and touching as a lyric.

CARL VAN DOREN.

VICE, Regulation of. The "social evil," as prostitution is euphemistically termed, constitutes four-fifths of the so-called vice of modern life. Prostitution is defined as promiscuous unchastity for gain. It is not an evil peculiar to any age or country. It existed in ancient Babylon to a degree and kind almost beyond belief and in terrible forms was a part of the religious cults of the Syrians, Phrygians, Egyptians, etc. Similar rites were part of the idolatrous practices for which the Israelites were rebuked. In ancient Greece it was a matter of civic glory and prostitution was there taught as an art. Orgies took place in the baths and in the temples while the stage reeked with obscenity. In the modern world we find the evil in every portion of the globe, in India, in Japan, in Hawaii and everywhere in proportion to our knowledge of the social life of a country's population. Although publicly condemned to-day and with an ever-increasing number of the pure it is believed to be eating under the surface to a degree that comes nigh imperiling our modern civilization. It is conservatively estimated that there are in the United States alone 600,000 public prostitutes and about an equal number who have sacrificed their chastity but continue to have other means of livelihood. Great cities and often the lesser cities are the homes of the prostitute, while their male companions not only come from the cities but also from the towns and villages.

The social evil wears a specially sinister aspect in Great Britain because in no country do so many children become its victims as in England; in no country does traffic in girls, especially that of minors, flourish as in England. On the Continent the vice is also especially prevalent. German cities regulate vice as do also the Scandinavian cities. France also regulates the vice by means of registration. That country is a den of vice as can be attested by very many men of the American Expeditionary Forces. Of the evils connected with prostitution there is scarcely need to speak. Many sociologists are coming to believe that the sexual evil, in its various forms, is greater even than that of intemperance. It is considered a more constant and fundamental cause of degeneration than drunkenness. It certainly effects degeneration of a more or less pronounced type in a much larger number of persons. It persists almost to the end in the most degenerate stock, while it is at the same time operative among the healthier classes. Intemperance, however, is all but universally the companion of prostitution. Many observers state that girls rarely can, and men rarely do, continue a fast life without drink. The saloon is often the entrance of the brothel, while the brothel as frequently leads to the saloon. An eminent authority has stated that more boys are converted to drinking habits in houses of ill fame than in the saloons. One of the great benefits of Prohibition in the United States will be the dissolution of this sinister partnership. The physical evils attendant on prostitution it is impossible to describe too strongly. These reduce youth to premature, helpless old age, transform the body into a rotten shell and affect not only the sinner but his posterity. One of the abominations of this evil is child prostitution, of the extent of which few have the remotest idea. If one is to credit the sad whispers of grave officials of the Church as to the morals in boy choirs, or in private and public schools, one finds fearful evidence of the existence, in all ranks of society, of various forms of unnatural vice. Akin to this evil is that of the organized traffic in girls, which is declared to be world-wide. It has been publicly stated that "syndicates exist in New York and Boston for the purpose of supplying fresh young girls from immigrants arriving in the United States, for houses of ill fame; agents of the business go abroad and assist in this nefarious traffic. Immigrants arriving in New York furnish 20,000 victims annually." Much has been done by the Church and societies to protect these immigrants but the evil is still very real. When it is realized that the life of a prostitute is but five years, one can understand what a traffic there must be to recruit the 600,000 in the United States alone, not to speak of the other countries of the world in some of which the traffic is even greater.

Causes.— Destitution, inclination, seduction and drink are given as the causes of this evil in the order named. Economic necessity drives many to the haunts of vice. Stores, where girls work long hours for small pay; the homes that have few comforts, and practically no pleasures; the streets, where girls are often cast, still unknown to sin, but in want and without

shelter; in a word, where distress and temptation stand present as a menace to purity and rectitude. Behind every effect there is a cause; in the case of prostitution, the real cause lies not in the girls who fall, but in the social conditions that make the fall easy, and the men who tempt to the step and furnish the money to support degradation after the step has been taken. The money returns from vice furnish a very great temptation to girls to part with their virtue. Some fall because they cannot find work; some because they do not wish to work. Prostitution costs a man money; to a woman it yields money and many a girl of indolent or lazy disposition, comely and healthy withal, soon learns that there is a market for such as she; that she can earn more in a night by sin than she can in a week or a month by work. The stage, the concert hall, and the ball bear a large responsibility. The supreme social cause of prostitution to-day, however, is the crowded tenement, where boys and girls have no attractive home, no healthy playground and must play on the streets. There bad company captures more girls than in any other one way. The supreme cause then of the evil is the bad housing of the poor, resulting from low wages, and the poverty of the great masses in our cities — a terrible price to pay that a few may roll in wealth.

Regulation.— In the early ages of the race prostitution, not being considered an evil, was not legislated against; the one great iniquity being adultery on the part of the wife, who might thus foist an illegitimate heir on the property of her lord. The early Christian emperors were among the first to attempt repression of this social scourge. In the course of time the state took cognizance of the evil and set about its control. Licensing and regulation of brothels were among the earliest methods tried to control prostitution. It is well to remember that its elimination was never contemplated, but it was desired to make of prostitutes a distinct class in the community and also to prevent disorder in the brothel. From these mediæval regulations have come the "systems of control" which obtain in Europe to-day. In France the police register public prostitutes. There are recognized brothels of two classes — *maisons de tolérance* and *maisons de passe*. At the first-named class there is a weekly medical examination of the inmates, while all other registered prostitutes are required to present themselves for examination every two weeks at the public dispensaries. Those found diseased receive hospital treatment. There are also certain rules in regard to solicitation, etc.; the infraction of which incurs a penalty of imprisonment of from 14 days to one year. No cognizance of prostitution is taken in the French criminal code. The penalties above stated being inflicted solely for breach of the rules or regulations, the major evil being ignored. The whole French procedure is of doubtful legality.

In Germany the legal regulations are more explicit. While prostitution is not forbidden, women who practise it are liable to arrest unless they are under police control, that is, unless they have registered and have complied with the regulations of paragraph 361 of the code. In this way the police regulation of prostitution obtains legal sanction and the traffic is completely under the police power. While these regulations vary according to locality, they all include compulsory registration and weekly or bi-weekly examination. Brothels are absolutely illegal throughout the German Republic.

In Austria prostitution is forbidden, yet the police are allowed to tolerate it under conditions and to regulate it and punish violation of these regulations. Procuration is a penal offense.

In Great Britain prostitution is regarded by the law in the light of a public nuisance. Various acts from 1755 on make it possible to deal with public brothels but it is generally left to the public to institute proceedings. Several cities have secured passage of special legislation for the prevention of "loitering for the purpose of prostitution or solicitation." Fines and imprisonment for short terms are the penalties imposed. The defilement of girls under 13 is felony; the defilement of those from 13 to 16 is a misdemeanor punishable by two years' imprisonment. The procuration or attempted procuration of any girl or woman is also a misdemeanor and subject to a similar penalty.

The French system has been copied in Belgium, Russia, Hungary, Portugal and Spain. Norway and Sweden follow in general the German plan, while Switzerland is divided between the two. Throughout the English-speaking world the English system of moderate repression and comparative freedom obtains. All systems fail of their object. Prostitution to a greater or less extent prevails in all countries despite regulations. In the United States attempts have been made at one time or another to introduce the registration system, but Saint Louis was the only large city which gave the system an extended trial. It was abandoned after four years of effort. The results proved an increase of 34 per cent in the number of brothels and of over 35 per cent in the number of registered women during the progress of the experiment. There was also an undoubted increase of clandestine prostitution. The percentage of diseased women rose from 3.75 per cent in the first year of registration to over 6 per cent in the third year under the system. After a prolonged and embittered discussion the system was abandoned. The efforts to suppress houses of prostitution have also proved futile. In New York City, owing to the agitation conducted by Dr. Parkhurst, hundreds of prostitutes were turned out of their houses and the places closed by the police. The parlor moralists considered this a triumph of morals. But the women were not rescued to virtue, nor were their male partners in vice so redeemed. Even if the women had been reclaimed, those men remained to seduce other women. The women, ousted from their regular places of abode, invaded the apartments of the upper middle class and the flats and tenements of those less well-to-do. In their former abodes they came little in contact with home life and childhood. Now they were scattered among the homes and children of the city. As well might we say of cases of smallpox that they should not be allowed in houses by themselves, and therefore scatter them around among homes. Similar results have followed "moral crusades" in other American cities.

Most students of the problem would not now countenance the licensing or inspection of

houses of ill fame, since this confers the sanction of law upon the barbarous trade in women, but would simply, if they do not become too bold, permit them within certain limits by themselves and meanwhile fight the evil by raising the general moral standard of the community. The segregation system seems impossible even if it were altogether desirable, which it is not. When vice is confined to a specified district, the latter at once becomes notorious; the thieving, lawless and seditious elements make it their rendezvous, and men fear to enter it because of the risk of identification. Since the income of its inhabitants must come from without, resort is had frequently to robbery, intimidation, blackmail, etc.

While all measures have failed, yet there is little hope in leaving the evil alone. Lack of restriction works no cure, as the experience of the London authorities amply testifies. Many believe that the evil is best reached through personal religious or ethical work, by raising the level of the standards of personal purity, and, above all, striving for an equal standard of morality for both men and women. On all sides it seems to be agreed that the existing dual standard of morality is, or will be, doomed, now that society, and especially the female portion of it, is becoming so keenly alive to its evils. Woman's increasing influence in political and economic fields is bound to be felt and her influence is assuredly for good. It is also felt that unless masculine morality is raised to a higher level, feminine morality may fall from the exalted position it has held so long, as it awakes to the full value of the fact that its purity is only playing into the hands of the impurity of the other sex. Many paths of reform have been mapped out, the chief of which are: (1) The movement started by those who believe that the purification of our social morals can only be attained by setting up for men the same high standard of chastity and purity of life as that which has been hitherto considered as binding only upon women of the protected and wife-supplying classes; (2) the course advocated by those who take an exactly opposite view, and who believe that the end is to be reached by some extension of sexual freedom to all classes of women. They regard the attempt to raise men up to that high level of morality hitherto reserved for women as a natural impossibility or Utopian dream. They would lower the standard for women in order to bridge over the wide gulf which now exists between the average sensual man and the average chaste woman, and still more between the latter and the woman of the streets; (3) the views of those who avoid both these extremes and advocate a middle course, viz., the reform of sexual morality through more liberal divorce laws. They believe that erring humanity ought to have the opportunity of retrieving even its matrimonial mistakes and failures, and that the sacrifice of individuals to an absolute system is neither moral nor expedient. To these are opposed a great number of religious bodies opposing divorce, and especially the oldest of the Christian churches, which denies its adherents the right of divorce and urges the teaching of a more practical Christian morality as the best means of raising social standards. In the populous centres of America prostitution, the drink evil, the prohibited drug traffic, and kindred evils have flourished because of systematic understandings between the proprietors of prohibited callings and the forces of law and order. To uncover these nefarious agreements investigations by private associations and by public officials have been instituted at frequent intervals. Of these the most sweeping were those made of the white-slave traffic in New York and Chicago.

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VICE-ADMIRAL. See ADMIRAL.

VICE-CHANCELLOR. See CHANCELLOR.

VICE-CONSUL. See CONSUL.

VICE-PRESIDENT. See PRESIDENT.

VICENTE, vē-sĕn'tā, Gil, Portuguese poet: b. 1470; d. after 1536. After studying jurisprudence at the University of Lisbon, he became connected with the court and there was the official provider of dramatic entertainment. Spanish was then much used at the court, and in that language Vicente composed 10 entirely and 15 partly, of his 42 works. He thus became a figure also in Spanish literature, and many of his dramas were presented in Spain. These are, however, in their material chiefly Portuguese. They have been arranged as *autos* (miracle-plays), comedies, tragi-comedies and farces. The first class comprises 12 sacred works for performance at church festivals. Vicente's humor and abundant originality won for him the title of the Portuguese Plautus. He has been ranked with Camoëns and Almeida-Garrett among the poets of the literature. The best collected edition continues to be that of 'Feio and Monteiro' (1834). Consult also Von Faber, 'Teatro Español anterior á Lope

de Vega' (1832); Ochoa, 'Tesoro del Teatro Español' (1838); *Quarterly Review*, Vol. 79 (1846–47); Braga, 'Historia do theatro portuguez no seculo XVI' (1870); De Ouguella, 'Gil Vicente' (1890).

VICENZA, vē-chĕnt'zā, DUKE OF. See CAULAINCOURT, ARMAND AUGUSTIN LOUIS DE.

VICENZA, Italy, capital of a northern province of the same name, and an episcopal see, 40 miles west of Venice, beautifully situated at the confluence of the Retrone with the Bacchiglione. It is surrounded by dry moats, now partly under cultivation, and by dilapidated walls. The city is well built, containing numerous fine mansions, many handsome streets and several elegant squares, among which the Piazza dei Signori, with its campanile, not more than 20 feet square and yet more than 300 feet in height, is conspicuous. The public buildings, though numerous, are somewhat monotonous, being almost all the work of Palladio, who was born here, or of scholars who imitated him. The most remarkable edifices are the Duomo, originally Gothic, but much injured by modern alterations; the Basilica, or Palazzo della Ragione, an ancient Gothic building; the Palazzo Prefetizzio, in a rich and fanciful Corinthian style; the Teatro-Olimpico, regarded as the most curious if not the finest work of Palladio; the Museo Civico, the lyceum, a very large public library, and numerous hospitals. The manufactures are silk, woolen and linen tissues, leather, earthenware, hats, etc. There is a large trade in grain and wine. Vicenza is written Veneto in Italian, and in olden times, Vicentia; it was founded about a century before the Christian era, and became a Roman municipal town. The province has an area of 1,056 square miles, with a population of about 618,238, or nearly 500 to the mile. The commercial population of the city is about 57,116.

VICEROY (French *vice-roi;* Latin, *rex,* a king), governor of a country or province ruling in the name and by the authority of a king; officer delegated by a sovereign to exercise regal authority in his name in a dependency; e.g., the lord-lieutenant of Ireland — who, however, is never officially so styled; the governor-general (or *Viceroy*) of India; the khedive (q.v.) (or *Viceroy*) of Egypt. Viceroy was the proper official designation of the governors of Naples, Spain and Peru, under the old Spanish monarchy.

VICH, or **VIQUE,** vēk, Spain, city of Catalonia, modern province of Gerona; on a hill-girt plain about 38 miles north of Barcelona. Its cathedral, built about 1040, repaired and modernized about the end of the 18th century, is bold and sumptuous in the interior; and the Gothic cloisters are exceedingly rich and elegant. Corn, fruit and a poor wine are the products of the vicinity; and the inhabitants are employed in weaving, and in manufacture of hats and paper. Vich, the Roman Ausa, was afterward called Ausona and Vicus Ausonensis, of the first part of which its present name is a corruption. Pop. 13,000.

VICHY, vē-shē, France, a town in the department of the Allier, in a beautiful valley of the river of that name, 32 miles southeast of Moulins. It was once a place of strength and has been celebrated since Roman times for its numerous thermal alkaline springs. There are about 40 springs in all, but the most important, 12 in number, belong to the government. The waters are drunk on the spot, are used for baths and about 2,500,000 gallons annually are bottled for export; and the salts obtained from them by evaporation are manufactured into lozenges. The temperature of the springs ranges from 59° to 106°, and the chief constituent is bicarbonate of soda. The Vichy waters are efficacious in urinary and uterine affections, diabetes, rheumatism, gout, and similar disorders. The town is well provided with the usual accessories of a spa, and is a fashionable resort, annually visited by about 60,000 persons; the permanent population (1918) is about 17,500.

VICKERS-MAXIM GUN. See ORDNANCE.

VICKSBURG, vĭks'bĕrg, Miss., city, county-seat of Warren County, on the Mississippi River, a few miles below the mouth of the Yazoo River, and on the Alabama and Vicksburg, the Vicksburg, Shreveport and Pacific and the Illinois Central railroads, about 45 miles west of Jackson, the capital and largest city of the State, and 230 miles northwest of New Orleans. The city has regular steamboat connections with all the important Mississippi River ports. It is in an agricultural region in which cotton is one of the principal products. It is on a high bluff overlooking the river, and the streets, though not broad, are regular, well-kept, and have a number of shade trees. The chief manufacturing establishments are cotton-seed-oil mills, planing mills, railroad shops, foundries, machine shops and an ice factory. In 1910 (government census) there were 47 manufactories with a combined capital invested in plants of $1,235,743; and employing 1,433 persons, to whom were paid annually $695,000. The cost of raw material was $1,085,127 and the annual value of the product was $2,229,344. The city has an extensive trade in cotton and lumber products and general produce.

The principal public buildings are the government building, the county courthouse, the Charity hospital, the churches and schools. The educational institutions are a public high school, Saint Aloysius College (R.C.), for boys, Cherry Street College (colored), founded in 1892, Saint Francis Xavier's Academy, public and parish schools for both races and school libraries. There is here a National cemetery which contains 16,727 graves, of which 12,723 are of unknown dead. The eight banks have a combined capital of about $1,000,000. There are two daily newspapers. The government is vested in a mayor and board of aldermen, consisting of eight members. Vicksburg was laid out as a city on the plantations of John Lane and William Vick. In 1840 it was incorporated. It soon became a prominent distributing centre for the interior towns and a shipping point for the products of the plantations. It came into great prominence during the Civil War. The city suffered some damages in 1876, when the river cut through a neck of land. The government has since expended about $3,000,000 in efforts to divert the Yazoo River, and also to restore the harbor. Pop. 23,000.

VICKSBURG, Military Operations Against and Siege of. The advisability of

fortifying Vicksburg to aid in the closing of the Mississippi River was apparent to the Confederates early in 1861, but not until after the fall of Fort Donelson, in February 1862, were any steps taken to garrison and fortify the place. Then General Bragg sent one regiment to occupy it and in March guns and ammunition were sent from Pensacola. In April General Beauregard recommended that works should be constructed on the bluffs commanding the river for 40 guns and that the place should be garrisoned by 3,000 men. Work was begun late in the month and six batteries had been completed by 18 May, on which day Commander S. P. Lee, commanding the advance of Farragut's fleet from New Orleans, appeared before the place and demanded its surrender, which was refused. Two days later Farragut arrived with additional vessels and transports carrying 1,500 men and a battery, under command of Gen. Thomas Williams; a reconnaissance was made, Williams decided that his force was too small to accomplish anything, upon which Farragut, with the greater part of his fleet returned to New Orleans, and Williams took his troops back to Baton Rouge. Upon his return to New Orleans, Farragut was met by instructions from the Navy Department to clear the Mississippi, which, at the time, was obstructed only by the batteries of Vicksburg. A mortar flotilla of 16 vessels, each with a mortar, under Commander D. D. Porter, was started and reached Vicksburg 20 June, and on the same day Farragut left Baton Rouge with three vessels of war and seven gunboats, carrying in all 106 guns, and a fleet of transports carrying Williams' brigade of 3,000 men and two batteries. Farragut reached Vicksburg on 25 June, and Williams' brigade was landed on the Louisiana shore, and with the assistance of 1,200 negro laborers began digging a canal across the peninsula opposite the city. With his 106 guns and the 16 mortars of Porter, Farragut attacked the Confederate batteries, but they were so high, more than 200 feet above the river, that little or no damage was done them. At the time the place was held by Gen. Earl Van Dorn with 16,000 men, and 40 heavy guns were in position. Failing to silence the batteries, the mortar flotilla, with one vessel and two gunboats, were left below, and early on the morning of the 28th Farragut, with two vessels and five gunboats, ran the batteries. The firing lasted about two hours and his loss was 15 killed and 42 wounded. The damage to his fleet was not serious and he had inflicted no damage on the Confederate works. Meanwhile a Union fleet, under Capt. C. H. Davis, had descended the Mississippi and on 1 July joined Farragut above Vicksburg. A sudden rise in the river destroyed the canal Williams was digging across the peninsula; he proposed to return to Baton Rouge and Farragut was expecting an order to return with him when, 15 July, a startling incident took place. Early in the morning some light gunboats of Davis' flotilla had been sent up the Yazoo to obtain information of the *Arkansas*, an iron-plated ram known to be building up that stream. The *Arkansas* was unexpectedly encountered and the Union gunboats steamed back, closely followed by the *Arkansas*. But one of Farragut's vessels had steam up and the Confederate ram passed directly through his entire fleet, delivering her saucy broadsides, and without injury proceeded to the shelter of the batteries of Vicksburg. Farragut was much chagrined and at once determined to run past the batteries that night and endeavor to destroy the ram in the passage. He passed the batteries with a loss of 20 killed and wounded, but did no damage to the *Arkansas*. On 20 July, Farragut received orders to return to New Orleans. He waited until Williams embarked his men and on the 27th started down the river, Davis on the same day going up the river to Helena. During the two months since the fleet had appeared before Vicksburg the Confederates had but 22 killed and wounded and no material damage had been done to their batteries.

The next movement against Vicksburg was by General Grant, who, 2 Nov. 1862, moving from Corinth, Mississippi and Bolivar, Tenn., with 30,000 men drove the Confederates from Grand Junction and followed along the line of the Mississippi Central Railroad to attack Vicksburg from the rear. General Pemberton, commanding the Confederate forces, fell back behind the Tallahatchie and on the 13th Grant occupied Holly Springs and made it a depot of supplies. Another advance was made, Pemberton fell back to Grenada and Grant halted south of Oxford until he could repair the railroads in his rear, and while so engaged heard definitely that General McClernand had been given command of an independent expedition to start from Memphis and open the Mississippi, and for which McClernand had already organized and sent some regiments to Memphis. Grant says: "I doubted McClernand's fitness and I had good reason to believe that in forestalling him I was by no means giving offense to those whose authority to command was above both him and me." So, to forestall McClernand, General Sherman, 8 December, was sent back to Memphis to take charge of the expedition which had been specially assigned to McClernand by the President and Secretary of War. Grant was about to advance from Oxford on Grenada when the Confederate cavalry, under Forrest, broke up the lines of communication in West Tennessee, and on the morning of 20 December Gen. Earl Van Dorn, at the head of 3,500 cavalry, dashed into Holly Springs, captured a greater part of the garrison and burned Grant's accumulated supplies. (See HOLLY SPRINGS). These two raids compelled Grant to fall back, and Sherman was notified not to sail from Memphis, but he did not receive the notification in time; the day Holly Springs was captured he started from Memphis, with four divisions of 30,000 men, moved down the river, accompanied by Porter's fleet, and on the 29th assaulted Chickasaw Bluffs, on Yazoo River, and was repulsed with a loss of 1,213 killed and wounded and 563 missing. (See CHICKASAW BAYOU, OR BLUFFS, BATTLE OF). General McClernand arrived at Memphis, after Sherman's departure, and following down the river assumed command and escorted by gunboats, under Admiral Porter, ascended the Arkansas River and captured Fort Hindman (q.v.). On 18 December Grant had received orders from Washington to divide his command into four army corps, with General McClernand to command one of them and to be

assigned to that part of the army which was to operate down the Mississippi. This materially interfered with his plans, as he had put Sherman in command of the river expedition, so after falling back to Grand Junction, Grant decided to go down the Mississippi, unite a part of his forces with those under McClernand and assume command of the whole. The army was divided into four corps commanded by Generals McClernand, Sherman, McPherson and Hurlbut, and Grant now planned a new campaign to get below Vicksburg and operate from the south. McClernand's and Sherman's two corps were moved from the mouth of the Arkansas to Young's Point to cut a canal across the peninsula opposite Vicksburg, on very near the line followed by Williams, and by the aid of this canal it was hoped to get below Vicksburg and land on the east bank of the Mississippi. The work was prosecuted from 22 January to 7 March 1863, much hard and exhausting labor being expended upon it, when there was a sudden rise in the river, the entire peninsula was flooded and work on the canal abandoned; it was an admitted failure. An attempt was made to reach the Mississippi south of Vicksburg, from Lake Providence, La., 60 miles above the city, through Bayou Macon, the Tensas and Washita rivers into Red River and then up the Mississippi to Vicksburg. This project was abandoned at the end of March. Meanwhile efforts were being made to reach the high ground north of Vicksburg by cutting the levees at Yazoo Pass, nearly opposite Helena, Ark., and by way of the Coldwater and Tallahatchie rivers gain the Yazoo River. A like movement was attempted through Steele's Bayou into Deer Creek, to reach the Sunflower River and through it the Yazoo above Snyder's Bluff. (See YAZOO PASS AND STEELE'S BAYOU EXPEDITIONS). All these efforts to flank the position on the right having failed Grant once more turned his attention to getting south of Vicksburg, by a series of bayous running from Milliken's Bend past Richmond to New Carthage, and on 29 March McClernand was ordered to move his corps toward Richmond and New Carthage, with a view to making his way to the banks of the Mississippi below Vicksburg and the batteries at Warrenton and Grand Gulf. At the same time Grant suggested to Porter that the gunboats run past the Vicksburg batteries to attack those at Grand Gulf and cover a landing in that vicinity. On the night of 16 April, Porter with eight gunboats, three transports with supplies and a number of barges filled with coal ran past the batteries, and although under fire for nearly two hours and struck many times the gunboats were uninjured. One of the transports was abandoned and burned by her commander and a coal barge was sunk. No one was killed and there were but a few wounded. On the night of the 22d six transports protected by cotton bales, loaded with supplies, and having 12 barges in tow, loaded with rations, ran the batteries, five getting through more or less disabled, while one was sunk. Some of the barges were lost. By the 27th, McClernand's corps was all at Hard Times on the Mississippi below Vicksburg and McPherson's was closing up. The plan was to have the navy silence the guns in Grand Gulf and to have as many men as possible ready to land under cover of the fire of the navy and carry the works by storm. At 7 A.M., 29 April, Porter with seven gunboats carrying 81 guns left his anchorage at Hard Times and steamed down the river, followed by transports and flat-boats carrying 10,000 men of McClernand's corps. Porter opened his guns upon the Grand Gulf batteries about 8 A.M. and by 1.30 P.M. the Confederate guns had not been silenced by the 2,500 shot thrown against them, and the fleet withdrew after a loss of 19 killed and 56 wounded. Grant now determined to move still farther down the river and flank Grand Gulf. McClernand landed his men at Hard Times and marched across the point opposite Grand Gulf and three miles down the river during the night, and Porter with his fleet of gunboats and transports dropped down to the same point. Grant had heard of a good landing on the east bank of the river, and at daybreak of the 30th transports and gunboats began ferrying the troops across to Bruinsburg, 10 miles below Grand Gulf and 32 in a straight line below Vicksburg; and at noon McClernand's four divisions of 18,000 men had been landed. At 4 P.M. McClernand pushed out 12 miles, fought the Confederates next morning at Port Gibson (q.v.), defeated them and caused the abandonment of Grand Gulf. While Grant was crossing the river at Bruinsburg, Sherman whose corps had been left at Young's Point went up the Yazoo River with a division, accompanied by some of Porter's gunboats, and made a strong demonstration on Snyder's Bluff, on the Yazoo, 12 miles above Vicksburg. On 3 May Grant rode into Grand Gulf. He says: "I resolved to get below Vicksburg, unite with Banks against Port Hudson, make New Orleans a base and, with that base and Grand Gulf as a starting point move our combined forces against Vicksburg. Upon reaching Grand Gulf after reducing its batteries and fighting a battle, I received a letter from Banks informing me that he could not be at Port Hudson under 10 days and then with only 15,000 men. The time was worth more than the reinforcements. I, therefore, determined to push into the interior of the enemy's country." (See PORT HUDSON, SIEGE OF). Grant advanced toward the rear of Vicksburg, defeated the Confederates at Raymond (q.v.) 12 May; Jackson (q.v.) 14 May; and then marched westward on Vicksburg. The battle of Champion's Hill (q.v.) was fought on 16 May, and General Pemberton, after his defeat, withdrew his army across Big Black River. Grant followed on the 17th. Pemberton tried to hold the bridge head on the east side of the stream, but his troops became demoralized and fell back across the bridge, losing 18 guns and 1,750 prisoners. Pemberton's troops on the west bank of the river covered the disorderly flight, enabling most of the troops on the east side to get over, and Pemberton ordered all his command to withdraw within the intrenched lines of Vicksburg. The fortified position at Snyder's Bluff on the Yazoo was abandoned and the garrison brought into the city, and the outpost at Warrenton, on the south, was drawn in. About 102 pieces of field artillery were also put in place around the exterior line of defense, which was about eight miles in length, and held by 19,000 effective men. On the river front were 40 heavy guns, with about 700 men. On

the 18th Grant closed in and on the right Sherman occupied Haines' and Snyder's bluffs, and Grant established his base on the Yazoo River above Vicksburg. McPherson, on the left of Sherman, held ground on both sides of the Jackson road, and McClernand south of McPherson, extended toward Warrenton. The movement into position was accompanied by constant skirmishing, which continued during the morning of the 19th. From the fact that the Confederates had been defeated in several engagements and were so demoralized at the affair on the Big Black, Grant concluded that Pemberton's entire force was so demoralized that it would yield to a vigorous attack and at 2 P.M. of the 19th ordered a general assault. Sherman on the right advanced and after hard fighting gained the ditch of the work near the Graveyard road, but could go no farther and was repulsed with a loss of 942 killed and wounded. McPherson and McClernand had over a mile to advance, and made part of it, under a heavy fire when darkness set in and they bivouacked. The next two days were spent in strengthening the position and in making roads in rear of the army to connect with its new base on the Yazoo River.

As Gen. J. E. Johnston was but 50 miles in Grant's rear collecting a force to assist Pemberton, it seemed advisable to Grant that he should press matters and he ordered a general assault for the 22d. Early in the morning a furious cannonade was opened on the Confederate lines, in which Porter's fleet joined, and at 10 A.M. Grant's 40,000 men threw themselves against the 20,000 Confederates covered by intrenchments. As the leading columns went forward not a Confederate was to be seen, but when they had come within easy range the Confederates rose up along the more than three miles of assault and delivered volley after volley, striking down the heads of the assaulting columns, and at the same time the reserves advanced and fired over the heads of those in the trenches. Every field gun double shotted with grape and canister joined in the defense. Sherman and McPherson, in some places, reached the ditch of the Confederate works and planted their colors on the parapet, but in general the assault was repulsed and the troops fell back under shelter. On the left McClernand succeeded in carrying a part of the Confederate line, but its defenders from a line 100 yards in rear drove him out; but he maintained his position in the ditch and planted some of his colors on the parapet. At noon McClernand reported to Grant that he held the Confederate works and that support on the right would be followed by complete success, upon which Sherman and McPherson were both ordered to renew the assault. The assault failed. Grant says it only served to increase the casualties without giving any benefit whatever. The firing continued till dark, when the troops that had reached the Confederate works were withdrawn. The Union loss in this assault was 502 killed, 2,550 wounded and 147 missing. The Confederate loss was not over 500.

The result of the assault convinced Grant that Vicksburg could be taken only by siege, which was immediately begun. The investing line was 15 miles long, extending from Haines' Bluff to Vicksburg, thence to Warrenton on the south. Artillery was put in commanding positions, and rifle-pits and covered ways constructed to connect the entire command by the shortest route. In no place were the opposing lines more than 600 yards apart, and the distance was gradually reduced. The work was pushed forward as rapidly as possible, and when an advanced position was secured and covered from the fire of the enemy, the batteries were advanced. The work had steadily progressed from 23 May and by 25 June a sap had been run to the Confederate parapet and a mine exploded just north of the Jackson road and a lodgment effected inside the works by two Union regiments, which, however, were driven out next day. Another mine was exploded on 1 July, but no attempt was made to take advantage of it. Three other mines were exploded at other points and by both sides, by which men were covered and killed and buried at the same time. The lines now were very close and the casualties on each side were from 10 to 100 every day. By 30 June Grant had received reinforcements raising his force to 71,000 men and he had in position 248 guns — 220 of which were field pieces and 28 heavy naval guns. A large part of the army was put under Sherman's command and disposed to resist the advance of General Johnston's army from Jackson to relieve Pemberton. By 1 July Grant's approaches were close up to the Confederate works and at many points the approaches had been pushed to within from five to 100 yards of the enemy and orders were given to make preparations for a general assault on the 6th. But Pemberton had concluded, after consultation with his division commanders, that it was best to surrender, as an assault was inevitable and his men too much enfeebled by hunger and constant duty to meet it, and on the 3d displayed white flags on his works and sent a note to Grant proposing an armistice to arrange terms of capitulation. Terms were agreed on and at 10 A.M. 4 July, the Confederate troops marched out, each division in front of its works, stacked arms, laid their colors upon them and then returned toward the town, where they were subsequently paroled. The prisoners surrendered numbered 31,600, together with 172 pieces of artillery, 67 of which were siege guns, about 60,000 muskets and a large amount of ammunition.

Before the surrender had been completed on the 4th, Sherman, with 48,000 men, had been ordered to march against Johnston, who with over 30,000 men had advanced as far as the Big Black to relieve Pemberton. Johnston heard on the night of the 4th of Pemberton's surrender and next morning retreated to Jackson, closely pursued by Sherman who besieged Jackson and captured it. (See JACKSON, SIEGE OF). Grant's losses in his entire campaign from 30 April, and including Sherman's siege of Jackson, were 1,243 killed, 7,095 wounded and 535 missing. The Confederate losses in killed and wounded are not known, but in killed, wounded and captured they aggregated full 40,000 men. Consult 'Official Records' (Vols. XV, XVII, XXII, XXIV, XXV, XXVII); Greene, 'The Mississippi'; Grant's 'Personal Memoirs' (Vol. I); Sherman's 'Memoirs' (Vol. I); The Century Company's 'Battles and Leaders of the Civil War' (Vols. II, III).

E. A. CARMAN.

VICO, ve'kō, **Francesco de**, Italian astronomer: b. Macerata, 19 May 1805; d. London, 15 Nov. 1848. He entered the Society of Jesus in 1823, studied and taught at the Roman College, in 1835 was appointed assistant, and in 1839 chief, of the observatory at Rome. A work by which he gained high reputation was a course of observations for the purpose of ascertaining the time of rotation of the planet Venus upon its own axis. He subsequently turned his attention toward the satellites and inner ring of Saturn, and also toward the nebulæ, upon which he wrote some detailed reports. When the Jesuits were driven from Rome by the revolution of 1848, he went to England, and afterward came to the United States. He had accepted a proposal to become director of an observatory to be erected under his auspices in the State of New York, went to England to obtain the necessary instruments and died there.

VICO, Giambattista, or **Giovanni Battista**, Italian jurist, philosopher and critic: b. Naples, 23 June 1668; d. 20 Jan. 1744. The son of a bookseller, he was educated by the Jesuits and afterward studied for the bar. Weak health prevented him from following his profession; and after nine years he obtained the chair of rhetoric in the University of Naples. In 1735 he was appointed historiographer to the king of Naples. As he married early, and had a large family, his life was passed in poverty; and it was, moreover, embittered by family troubles, and by constant ill health. The great work which has made his name illustrious, the 'Principi d'una Scienza nuova d'intorno alla comune natura delle nazioni,' appeared 1725; but it was completely recast in an edition 1730, with the effect of making it more imposing as a system, at the expense of a great loss of clearness. A third edition, enlarged, was published shortly after the author's death. In the 'Scienza Nuova,' Vico brought together, and attempted to fuse into a system, opinions which he had previously advanced in separate treatises. The slowness of the work in gaining its proper place in European literature must be attributed largely to its obscure and enigmatical style. Much of the obscurity arises from an uncouth terminology, which the author often leaves unexplained, and (in the later and authoritative editions) from rigorous application of the deductive method to subjects which do not always admit of it. The 'Scienza Nuova' was virtually unknown out of Italy as late as 1822, when a German translation of it appeared at Leipzig.

It was, a few years later, translated into French (with some curtailment) by Michelet 'Principes de la Philosophie de l'Histoire, traduits de la 'Scienza Nuova' de G. B. Vico'; Paris 1827); and Vico has since found his proper rank among the most profound, original, and ingenious of modern thinkers.

The 'Scienza Nuova' (De' Principj d'una Scienza Nuova d'intorno alla Comune Natura della Nazioni') may be described as a 'Novum Organum' of politico-historical knowledge. Observing, amid the infinite variety of thoughts and actions, of language and manners, which the history of nations presents, a constant recurrence of the same characteristics, and, in the political changes which peoples the furthest removed from each other in time and place have passed through, an essential similarity of development, Vico proposed to himself the task of distinguishing amid social phenomena the regular from the accidental; of finding out the laws which govern the formation, the growth, and the decay of all societies; in fine, of tracing the outlines of the universal, the ideal history of society — the idea of which he himself believed to have existed from eternity in the mind of God. In doing this, he attempted, by historical criticism on the widest basis, to illustrate the interdependence of all the sciences; to show that the progress of each is related to that of all, and the progress of all of them dependent on, while also acting powerfully on, the general condition of society. While holding that the actual state of every society is the result of a free development of the human faculties, he attempted to give a historical demonstration of the existence of a Divine Providence directing the career of nations, overruling the designs which men propose to themselves; operating, however, not by positive laws or arbitrary interferences, but by methods and expedients to which men freely resort — i.e., God's providential governance of nations is not by continued miracle, but, like His rule over nature, by natural laws. It has been said that the 'Scienza Nuova' includes a system of social (as distinguished from natural) theology — a demonstration of God's government of the world, and of the laws in which that government consists. Vico, in these inquiries, accepted from Descartes the individual consciousness as one of the criteria of truth; but he employed another also — the collective consciousness, or the common sense of mankind — the accord of the race, as it may be gathered from history — in a word, authority.

It would be difficult to overrate the ingenuity and originality of many of the inquiries into which Vico was led by the attempt to delineate the ideal history of society; and he has rarely failed to express views rational and probable compared with those accepted among his contemporaries. With admirable insight, he has not seldom hit on the conclusions to which increased social knowledge and more scientific conceptions have conducted inquirers in later generations. Thus, in clearing the ground for the foundation of his system, he was led to precisely those views about Homer and the authorship of the Homeric poems which are popularly associated with the name of Wolf; and to anticipate the general view of the credibility of early Roman history which was elaborated by Niebuhr. (See also COMTE, the germs of many of whose speculations are in Vico). The beginnings of religion, the origin of poetry and language, the commencement of society (which he ascribes to the influence of a common religious belief and worship), the foundation of the privileges of the heroic or aristocratic class, are among the earlier subjects of his speculation. He proceeds to trace the origin of jurisprudence, and to show how its development has been dependent on social changes; and he afterward deduces from the history of ancient societies, and in some degree from the history of the governments which sprang out of the ruins of the Roman empire, the laws which govern the progress, the conservation, and the decay of nations. A monarchy, with an equality of civil and political rights as between subjects, was

his ideal of good government for advanced societies.

Vico's theory as to the *law of cycles* in history — the movement being similar in different nations, and the path in successive periods also being similar through recurrence of the same forces — has been misunderstood as a positive denial of actual or possible advance. But he simply does not deal with the problem of the laws governing the advance of the race; and his historic cycles may easily be conceived of as following each a path similar throughout to that of each preceding, yet with one continuous upward movement as with a slow spiral ascent. This law, however, he does not develop.

Though he ascribed to religion a paramount influence in forming and conserving society, and though it was one of his principal objects to demonstrate the divine government of the world, Vico did not escape the suspicion of having written in a spirit of hostility to religion. It was alleged that he had written so obscurely, as he often did, through the fear of incurring ecclesiastical censures. Some critics of another school charged him, with at least equal plausibility, of having striven, both in his particular doctrines and in his consecration of the principle of authority, to satisfy the Roman Catholic Church. The cavils on either side are little deserving of attention; and it is pleasant to know that Vico, though not unconcerned about the accusations against him, felt in his later years consoled for the many trials and disappointments of his life, by the completion of a work whose greatness he knew better than any of his contemporaries. In 1818 the Marquis de Villa Rosa published a collection of the whole of Vico's works, with a biography (2d ed., 1835). Vico's other works are 'De Ratione Studiorum' (1708); 'De Antiquissima Italorum Sapientia' (1710); 'De Universi Juris Uno Principio et Fine Uno' (1720); 'De Constantia Jurisprudentis' (1721). There are also the French edition by Michelet, referred to above, and a German translation. Consult Flint, 'Vico' (Edinburgh 1884); Ferrari, 'Vico et l'Italie' (Paris 1839); Cantoni, 'G. B. Vico' (Turin 1867); Diendorfer, 'Gianbattista Vico und seine Ideen' (1877); Klemm, 'G. B. Vico als Geschichtsphilosph und Völkerpsychology' (1906).

VICTOR, Claude Perrin, Duc de Belluno, marshal of France: b. La Marche, Vosges, 7 Dec. 1764; d. Paris, 1 March 1841. At 17 he enlisted in a regiment of artillery and served eight years as a common soldier. He re-enlisted in 1792, and for his conduct at the siege of Toulon in 1793 was made general of brigade. He served with distinction in the Italian campaigns, and Napoleon gave him the marshal's baton on the field of Friedland (1807), and later the title of Duke of Belluno. He commanded the first army corps in Spain, 1808–12, and lost the battles of Talavera and Barrosa, and while commanding the Ninth corps in the fatal Russian campaign covered the crossing of the Berezina. He afterward lost the emperor's favor by neglecting to occupy the bridge of Montereau-sur-Yonne, and adopted the cause of the Bourbons, Louis XVIII giving him the command of the second division, and the presidency of the military commission appointed to try such officers as had deserted to Napoleon during the "Hundred Days." He was Minister of War, 1821–23. His 'Mémoires Inédits' was published in 1846.

VICTOR, Orville James, American author: b. Sandusky, Ohio, 23 Oct. 1827. He was graduated at the Theological Institute, Norwalk, Ohio, in 1847, was on the editorial staff of the Sandusky *Daily Register* (1851–56), and of the *Cosmopolitan Art Journal* (1856–61). He edited several compilations and wrote 'History of the Southern Rebellion'; 'History of American Conspiracies'; and popular biographies of John Paul Jones, Winfield Scott, Garibaldi and others. He died 17 March 1910.

VICTOR, the name of three popes, as follows:

VICTOR I, Saint. He was of African birth and succeeded Saint Eleutherius as Pope about 190. He threatened to excommunicate all bishops refusing to accept the Roman computation of Easter, but was dissuaded from this by Irenæus. He was concerned in the Monachian controversy also, and excommunicated the Monachian leader, Theodotus. He was succeeded by Saint Zephyrinus about 202.

VICTOR II (Gebhard, gĕb'härt). He was a son of a Count of Tollenstein and Hirschberg and became bishop of Eichstädt. His election to the pontificate in 1051 was opposed by his friend, the German emperor Henry III, who did not wish to lose his counsels. He was noted for his zeal in suppression of vice and his opposition to simony. He was followed by Stephen X.

VICTOR III (Desiderius, dĕs-ĭ-dē'rĭ-ŭs). He belonged to the noble family of Benevento and early in life entered a Benedictine monastery in opposition to the wishes of his family. In 1058 he became abbot of Monte Cassino and the next year was made a cardinal. As papal vicar in southern Italy he conducted the negotiations between the Pope and the Normans in Sicily. He was elected to succeed Gregory VII, much against his will, and accepted the pontificate only after the lapse of a year. His pontificate lasted through six months of 1086 and 1087, but within this short period he closely followed out the policy of Gregory VII.

The title of Victor IV was assumed by two antipopes, Cardinal Gregorio Conti in 1138, and Cardinal Octavian, 1159–62.

VICTOR AMADEUS I, ăm-ą-dē'ŭs, king of Sardinia. See Savoy, House of.

VICTOR AMADEUS II, king of Sardinia: b. 1726; d. 1796. He succeeded his father, Charles Emmanuel III, on the throne in 1773. He founded the Academy of Sciences at Turin and displayed much zeal for the welfare of his subjects. His hostility to the Revolution in France provoked a contest with that country, in the course of which Nice, Savoy and portions of Piedmont were secured by France.

VICTOR-AMADEUS II, Duke of Savoy: b. 14 May 1666; d. 31 Oct. 1732 (ruled 1675–1730); grandson of Victor-Amadeus I. He was an able prince and an energetic administrator. In 1684, Victor married Anne-Marie of Orleans, niece of Louis XIV, and daughter of Henrietta of England; but the overbearing insolence of the 'Grand Monarque,' who forced him to persecute the Waldenses (q.v.), and arrogantly

VICTOR EMANUEL II

ordered him to contribute an auxiliary force to the French army, and give up the citadel of Turin, drove him into a league with Austria and Spain against France. In revenge, a French army under Catinat assailed Victor's dominions, and though he was reinforced by 4,000 Austrians under his relative, Prince Eugene, the allies were routed at Staffarda (Aug. 1690), and the victorious Catinat completed the reduction of Savoy and Nice before the winter of 1691. The duke, aided by considerable reinforcement from Austria and Spain, gallantly maintained the contest; but a second and more disastrous defeat at Marsaglia (4 Oct. 1693), where he left 10,000 dead on the field, put almost the whole of Piedmont at the mercy of the French. The war, however, continued; the duke's obstinacy and almost romantic daring balancing Catinat's military genius; till in 1695 Victor-Amadeus accepted favorable proposals of peace which detached Savoy from the grand alliance. In the war of the Spanish Succession, Victor took part with France (1700) and was appointed commander-in-chief of the combined armies of France and Spain; but though he was aided by the counsels of his old opponent Catinat, the Austrians, under his former ally Prince Eugene, defeated him at Chiari (November 1701). In 1703 the tempting offers of Austria and Britain induced him to abandon France, and join the alliance against her. The French were routed by the duke and Prince Eugene under the walls at Turin, 7 Sept. 1706. In 1713 by the treaty of Utrecht, Duke Victor-Amadeus was rewarded by receiving the rest of Montferrat, Val-Sesia, Lomellino, and the island of Sicily, with the title of king; besides being acknowledged as heir to the Spanish throne, in case of the failure of the Bourbon dynasty. In 1720 Charles VI of Spain persuaded him to surrender Sicily in exchange for Sardinia — an exchange which in later times proved most fortunate for the House of Savoy. The latter portion of Victor's long reign was employed in improving the administration, replenishing the exhausted treasury, encouraging agriculture and industry, and advancing education. In 1730, the king abdicated in order to marry the Countess of San Sebastian, but attempting at her instigation in the following year to resume the crown, he was arrested and imprisoned, and soon afterward died.— His grandson Victor-Amadeus III (ruled 1773–96) was compelled by Napoleon's victories to cede Savoy and Nice to the French republic.

VICTOR EMMANUEL I, king of Sardinia, son of Victor Amadeus (q.v.): b. 24 July 1759; d. Moncalieri, Italy, 10 Jan. 1824. He succeeded to the throne on the abdication of his brother, Charles Emmanuel IV, 4 June 1802. His territories on the mainland were occupied by the French and he, therefore, resided at Cagliari until 1814, when his possessions were restored to him by the Congress of Vienna and the duchy of Genoa was added to his kingdom. He introduced various reactionary measures which resulted in a revolution and on 13 March 1821 he abdicated in favor of his brother Charles Felix.

VICTOR EMMANUEL II (VITTORIO EMANUELE, vē-tō'rē-ō ā-mān-oo-ĕl'ā), king of Sardinia, 1849–61 and of Italy 1861–79: b. Turin, 14 March 1820; d. Rome, 9 Jan. 1878. He was the eldest son of Charles Albert (q.v.), king of Sardinia, was trained in military science and in the campaign of 1848–49 against Austria was commander of a brigade. After the battle of Novara, Charles Albert abdicated in favor of his son, Victor Emmanuel, who thereupon became king of Sardinia, 23 March 1849. The new king soon showed himself faithful to the Constitution in his negotiations with Austria and finally received the title of the honest king (*Re galantuomo*). With the aid of wise ministers, among whom was the celebrated Cavour, he regulated the finances, reorganized the army, secularized the Church property, gave a stimulus to trade and commerce and prepared his country to assert its independence in an effort to unite Italy. To this end, and in order that Sardinia might claim to be a power in European politics, he sent 17,000 troops to the Crimea (1855) to fight with France and England against Russia. In the Congress of Paris (1856) Sardinia took part and her demands that Austria should deal more leniently with the Italian provinces which she occupied were supported by France and England. Cavour also entered into an alliance with Napoleon III when they met at Plombières, securing France as an ally against Austria when that power invaded Piedmont 23 April 1859. Several of the Italian states having now declared in favor of Victor Emmanuel as their king, he took command of the army, and entered upon a campaign against Austria with Napoleon III as his ally. After a series of engagements, ending with the victory of Magenta, he entered Milan with Napoleon III. The Austrians were routed and Lombardy annexed to Sardinia after the battle of Solferino, when suddenly Napoleon III closed the war by the Treaty of Villafranca 11 July 1859 which frustrated the hope of making a united Italy. The Italians declared their cause was betrayed by this treaty and Cavour, disheartened, retired for a time into Switzerland. This period of gloom soon passed when Tuscany, Modena, Parma and the Papal States declared for Victor Emmanuel as their king. This was followed by the conquest and annexation of Sicily by Garibaldi; and as the Sardinian king was now master of the peninsula, with the exception of Rome and Venetia, it was decreed by the Senate 5 May 1860 that he should receive the title of king of Italy. It had been a great personal loss to Victor Emmanuel when he was required to cede Nice and Savoy, the cradle of his family, to France; and the death of Count Cavour in 1861 was at once a grief to the king and something that seemed, for the time, a national disaster. Yet, although deprived of his favorite minister, Victor Emmanuel gave constant attention to the material interests of Italy, so that roads were constructed, the coinage was recast, tithes suppressed and the ecclesiastical establishments placed under the control of the state. Nor did he slacken his efforts to obtain the complete freedom of Italy from foreign occupation and in this he was greatly favored by circumstances. In the Austro-Prussian War in 1866 the Italian troops took the field in alliance with the latter power, and although checked at Custozza and Lissa, Victor Emmanuel received the cession of Venetia 7 Nov. 1866 as the result of the Austrian defeat at Sadowa. Rome still remained in the hands of the papal

authorities, supported by France; but when the Franco-Prussian conflict began, in 1870, the French troops were withdrawn and on the 20th of September, Victor Emmanuel entered Rome, which became thenceforward the capital of Italy. The efforts of the king were now directed to the development of Italy and the maintenance of peace through a reconciliation with Austria and an alliance with Germany. His death produced profound sorrow throughout Italy, for he was beloved not less for his honest manliness of character than for the benefits which his courage and wisdom had conferred upon his country. Consult Rufer, 'König Victor Emanuel' (1878); Godkin, 'Life of Victor Emanuel II' (1879); Massari, 'La vita ed il regno di Vittorio Emanuele II' (1880); Capeletti, 'Storia di Vittorio Emanuele II e del suo Regno' (1894); Stillman, 'The Union of Italy' (1898).

VICTOR EMMANUEL III, king of Italy: b. Naples, 11 Nov. 1869. He succeeded to the throne, 29 July 1900, as a result of the assassination of King Humbert, his father (q.v.). As Prince of Naples he entered the army as sub-lieutenant in 1887, in 1890 became colonel and commander of the First Infantry at Naples, in 1892 major-general, in 1894 lieutenant-general, in 1897 commanding general at Naples. On 24 Oct. 1896 he was married to the Princess Helena (b. 1873), daughter of Prince Nicholas of Montenegro. They have four daughters, and an heir apparent, Prince Umberto, b. 15 Sept. 1904. The king is a fine numismatist and a 'Corpus Nummorum Italicorum' began to appear under his direction in 1903. He was active in the command of Italian troops during the World War. Consult Basletta, 'Vittorio Emanuele III' (1901).

VICTORIA, vĭk-tō'rĭ-a, queen of the United Kingdom of Great Britain and Ireland and empress of India: b Kensington Palace, London, 24 May 1819; d. Osborne, Isle of Wight, 22 Jan. 1901. She was the only child of Edward, Duke of Kent, fourth son of George III, by Mary Louisa Victoria, youngest child of Francis Frederick Antony, Duke of Saxe-Coburg-Saalfeld, and widow of Prince Ernest Charles of Leiningen. On 24 June she was baptized by the names of Alexandrina Victoria. The reigning sovereign was George III, and there stood between her and the throne the Prince Regent, afterward George IV, the Duke of York, the Duke of Clarence, afterward William IV, and her father. On 23 Jan. 1820, her father died, only nine days after the death of George III. The formal education of the princess began in 1824, her first teacher being Fräulein Lehzen, but from 1827 the chief direction of her studies was entrusted to the Rev. George Davys, afterward bishop of Peterborough. On the death of George IV in June 1830 she became heir-presumptive to the throne. She was confirmed at the Chapel Royal, Saint James, 30 July 1835, and in May of the following year she first met her future husband. The death of her uncle, William IV, 20 June 1837, raised her to the throne, nearly a month after she had attained her majority. She elected to be known by the name of Victoria. The young queen, daughter of a Whig or even Radical father, held Whig principles herself, and soon learned to place implicit confidence in Melbourne, head of the Whig government, and to look to him for political guidance. For many years she was regarded with somewhat unfriendly feelings by the Tories, but her chief favorite among the statesmen with whom she afterward came into contact was a Tory, or at least a Conservative, Benjamin Disraeli. She opened her first Parliament, 20 Nov. 1837. Her coronation took place in Westminster Abbey, 28 June 1838.

On 15 Oct. 1839, Victoria was engaged to her cousin, Prince Albert, youngest son of the Duke of Saxe-Coburg, and on 10 Feb. 1840 their marriage was solemnized in the chapel of Saint James' Palace. In July of that year a bill was passed making Prince Albert regent in case the queen should not survive her first confinement, and on 21 November her first child, the Princess Royal, was born at Buckingham Palace. Melbourne was defeated in the House of Commons in 1841 on a vote of no confidence, and Parliament was dissolved. The Tories were triumphant at the polls, and Sir Robert Peel, whom the queen at first distrusted but soon learned to like, became Premier. On 9 Nov. 1841 a male heir to the throne, afterward Edward VII, was born at Buckingham Palace. Victoria made her first visit to Scotland in September 1842, and in the following year she left Great Britain for the first time, to visit Louis Philippe at Eu and King Leopold at Brussels. When Peel in 1845 determined on the repeal of the corn-laws the queen gave him her whole-hearted support. Lord John Russell formed a ministry, with Lord Palmerston as Foreign Secretary, a position in which he gave her much anxiety. In 1848, the year of revolution, she made her first stay at Balmoral, which was afterward to be her residence during a large part of each year. She had already acquired Osborne, in the Isle of Wight (1844). She visited Ireland for the first time in 1849, and on that occasion the cove of Cork, where she landed, was renamed Queenstown in her honor. In 1848 and the three following years her dislike of Palmerston's foreign policy steadily increased, but in December 1851, his wholly unwarranted approval of the *coup d'état* in France caused Lord John Russel to remove him from office. During the period of the no-popery outcry which followed the re-establishment of Roman Catholic bishoprics in England in 1850, the queen steadily discountenanced Protestant bigotry. Lord John Russell was defeated in 1852, and Lord Derby formed a new ministry with Disraeli as Chancellor of the Exchequer and leader of the lower House. Derby resigned in December, and at the queen's suggestion Lord Aberdeen formed a coalition ministry, including Palmerston and Russell. During the war with Russia (1854–56) the conduct of the queen won universal commendation. Early in 1855 Aberdeen was defeated on the question of the conduct of the war, and the queen was reluctantly compelled to ask Palmerston to form a ministry. The Victoria Cross, for acts of conspicuous bravery in battle, was instituted at her instance in 1856. In 1857 Prince Albert was created Prince Consort by letters patent, and in the following year Palmerston was succeeded in the premiership by Lord Derby. Victoria interfered with excellent

THE YOUNG QUEEN VICTORIA (1840)

effect in the matter of the proclamation issued to her Indian subjects in 1858, and she created the new order of the Star of India the year following the Mutiny to reward native loyalty and eminent services in that country. The elections of 1859 placed Derby in a minority and compelled her to accept another Palmerston-Russell ministry. She at once came into conflict with them on the Italian question, in which her sympathies were with Austria. Distrust of the intentions of Napoleon III, which she fully shared, led to the foundation of the volunteer force in 1859, and in 1860 she formally inaugurated the National Rifle Association at Wimbledon.

On 16 March 1861, her mother died, and on 14 December of the same year she suffered her crowning affliction, the death of her husband, a bereavement which altered the whole tenor of her life. For many years she lived in almost uninterrupted seclusion, and only toward the very end of her reign did she return to anything like the court system of her married life.

The war between Prussia and Denmark caused her keen anxiety, her sympathies on the whole being with Prussia, while the wife of her eldest son was a Danish princess. The death of Palmerston in 1865 raised Lord John (now Earl) Russell to the premiership, and the consequent rearrangement of portfolios made W. E. Gladstone Chancellor of the Exchequer. This institution of the Albert Medal in 1866 for bravery in rescuing at sea showed at once her devotion to her husband's memory and her quick human sympathy. The war between Prussia and Austria was a severe trial to her, because she had near relatives on both sides, and her satisfaction at the aggrandizement of Prussia was qualified by regret at other results of the war. Earl Russell's defeat on the reform bill led to his resignation in 1866, and a Derby-Disraeli ministry came into power. Disraeli had her active support in carrying his reform bill, which was congenial to her Whig principles. On Derby's resignation in 1868 Disraeli became Prime Minister, but his defeat on Gladstone's Irish Church resolution led to a dissolution. The electors gave the Liberals a large majority, and in December 1868 Gladstone became Premier and inaugurated a succession of reforms which she regarded with some alarm. With Gladstone she was never in sympathy. Recognizing, however, that Irish disestablishment was inevitable, she used her influence with Archbishop Tait to secure the passage of the bill through the House of Lords. Cardwell's important army reforms were distasteful to her, for she always tried to retain control of the army as a royal prerogative.

The dissolution of 1874 placed the Conservatives under Disraeli in power, much to the satisfaction of the queen; and in 1876 the Royal Titles Bill, conferring upon her the additional title of empress of India, was passed. The passing of this bill may be taken as marking the formal beginning of the movement known as Imperialism, with which Queen Victoria was from the first in hearty sympathy. Disraeli was rewarded for his services by being raised to the upper House as Earl of Beaconsfield, and the new régime in India was signalized by the institution in 1877 of the Orders of the Indian Empire and the Crown of India. Gladstone's passionate denunciations of Beaconsfield's Eastern policy and of his aggressive imperialism in other parts of the world during the years 1876–79 were extremely distasteful to the queen, and his return to power after the overwhelming Liberal triumph of 1880 was far from welcome to her. She disapproved strongly of the action of her ministers in regard to the Transvaal in 1881, and during the Egyptian and Sudan troubles of 1882–85, which culminated in the unhappy fate of the brave Gordon, she never ceased to urge strong action upon her advisers. The negotiations which led to the passing of the franchise and redistribution acts of 1884 and 1885 were much aided by her influence and tact. Gladstone was defeated in June 1885, and Salisbury came into office; but in the following January she had to recall Gladstone. She was strongly opposed to the Home Rule policy which Gladstone now adopted, and was greatly relieved by its defeat in the Commons and at the polls, and by the return of Salisbury to power (1886).

The completion of the 50th year of Victoria's reign, in 1887, was celebrated throughout all her dominions with appropriate splendor and rejoicing, and her diamond jubilee in 1897 called forth even more striking demonstrations of loyalty and respect.

The general election of 1892 placed Gladstone again in power, and once more the queen had to face the question of Home Rule, but she was relieved by the rejection of the 1893 bill in the House of Lords. In 1894, Gladstone resigned, and the queen summoned the Earl of Rosebery to the head of the government. The Liberal government fell in 1895, and the queen again asked Salisbury to form a ministry. He remained in power during the rest of her reign. On 23 Sept. 1896 her reign exceeded in length that of George III, till then the longest in English history. When Gladstone died in 1898 she expressed sympathy with his family, but she made no pretense of admiration for his public policy and achievements. The South African War (q.v.), which began in October 1899, caused her much anxiety and pain and called forth her former enthusiasm for the army and her old sympathy with suffering. She sent boxes of chocolate to the troops at the front at Christmas, 1899, and in recognition of the bravery of Irish soldiers in the field she conceded the permission to wear the shamrock in the army on Saint Patrick's Day, and ordered the formation of a regiment of Irish Guards. She visited Ireland in 1900, after an absence of nearly 40 years.

During the last few years of her life she suffered from rheumatism, failing eyesight and a tendency to aphasia. On 15 Jan. 1901 she drove out for the last time, and from that day gradually sank till the 22d, when she peacefully passed away at 6.30 P.M. in the presence of all her surviving children except her eldest daughter, who was slowly dying in Germany. Her reign of 63 years, seven months and two days is the longest in English history, and she outlived all previous British sovereigns, being at her death three days older than George III. Her remains rest in a sarcophagus in Frogmore mausoleum, besides those of her husband. During the later years of her life she spent much of her time abroad and at Balmoral and

Osborne, and never remained in London for any length of time. Several attempts were made upon her life at various times, but none of them was of any significance or importance. In 1868 she issued 'Leaves from the Journal of our Life in the Highlands,' and in 1883 'More Leaves'—both being very unpretentious little works corresponding with their titles. She also supervised the publication (1868) of 'The Early Years of His Royal Highness, the Prince Consort,' and in 1874–80 supervised another life of her late husband.

To Queen Victoria and Prince Albert were born four sons and five daughters: Victoria Adelaide Maria Louisa, Princess Royal, born 21 Nov. 1840, married 25 Jan. 1858, Frederick, afterward king of Prussia and German emperor, died 5 Aug. 1901; Albert Edward, afterward Edward VII, born 9 Nov. 1841, married 10 March 1863, Princess Alexandra Caroline Marie Charlotte Louisa Julia, eldest daughter of King Christian IX of Denmark, died 6 May 1910; Alice Maud Mary, born 25 April 1843, married 1 July 1862, the Grand Duke of Hesse, died 14 Dec. 1878; Alfred Ernest, Duke of Edinburgh, born 6 Aug. 1844, married 23 Jan. 1874, the Grand Duchess Marie of Russia, became Duke of Saxe-Coburg 22 Aug. 1893, died 30 July 1900; Helen Augusta Victoria, born 25 May 1846, married 5 July 1866, Prince Frederick Christian of Scheswig-Holstein, died 28 Oct. 1917; Louise Caroline Alberta, born 18 March 1848, married 21 March 1871, the Marquis of Lorne, afterward Duke of Argyle; Arthur William Patrick Albert, Duke of Connaught, born 1 May 1850, married 13 March 1879, Princess Louise Margaret Alexandra Victoria Agnes of Prussia; Leopold, Duke of Albany, born 7 April 1853, married 27 April 1882, Princess Helen of Waldeck, died 28 March 1884; Beatrice Mary Victoria Feodore, born 14 April 1857, married 23 July 1885, Prince Henry Maurice of Battenberg. Six of the queen's children survived her, and of the nine all but the Duchess of Argyle had issue. At the time of her death she had 31 grandchildren, and of her great-grandchildren there were 37.

Bibliography.— Biographies and sketches of Queen Victoria in great numbers are accessible everywhere. Among them may be mentioned Arnold, 'Victoria, Queen and Empress: the Sixty Years' (1897); Benson, A. C., and Esher, Viscount, 'Letters of Queen Victoria' (1837–61; 1908); Esher, 'Girlhood of Queen Victoria' (1912); Gurney, 'Childhood of Queen Victoria' (1901); Holmes, 'Queen Victoria' (1901); the series by Clare Jerrold, 'Girlhood,' 'Early Court,' 'Married Life' (1912) and 'Widowhood' (1916); the excellent 'Life' by Sir Sidney Lee (1903); Martin, 'Queen Victoria as I Knew Her' (1908); Tooley, 'Personal Life of Queen Victoria' (1897). Consult also the 'Greville Memoirs' and the other political memoirs of the reign.

VICTORIA, vĕk-tō'rē-ā, **Guadalupe** (JUAN FELIX FERNANDEZ), Mexican general and politician: b. Durango, 1789; d. Porote, 21 March 1843. An ardent patriot he took part in the war for independence and changed his name to Guadalupe Victoria to commemorate a victory over the Spanish forces. He aided in the overthrow of Iturbide in 1823, was a member of the provisional government from March 1823 to October 1824, was the Federalist candidate for the Presidency and became the first President of the Mexican republic 10 Oct. 1824. Civil war broke out in 1828, but he retained his office till the expiration of his term, 1 April 1829.

VICTORIA, in Roman mythology the goddess of victory, identical with the Greek Νικη (see NIKE). There was a temple in early times on the Palatine, on the site of which a new one was dedicated during the Samnite wars (294 B.C.). She was represented with wings, crowned with laurel and holding the branch of a palm tree in her hand.

VICTORIA, Australia, the southeastern state extending between lat. 34° and 39° S., and long. 141° and 150° E. It is bounded on the northeast by New South Wales; on the west by South Australia, the boundary elsewhere being the ocean; Bass Strait on the south separates it from Tasmania; area, 87,884 square miles. The greatest dimension is east and west, 480 miles. The principal cities are Melbourne, Ballarat, Bendigo and Geelong.

Topography.— The coast both at the eastern and western extremities is low and flat, and with few indentations, but in the centre, between Cape Otway and Wilson Promontory, it is broken by large bays and skirted by perpendicular cliffs 500 to 1,000 feet in height. Among these natural harbors the most remarkable is Port Philip Bay, which, with an area of 875 square miles, and an entrance scarcely two miles wide, affords a safe shelter for the largest fleet. The entire seaboard, which has a southern aspect, is about 600 geographical miles in extent. The interior, though somewhat diversified by mountains, is chiefly distinguished by vast unwooded plans, so that it has been said the plow might often be drawn continuously for 100 miles across tracts of agricultural land. The land, however, is chiefly occupied as pasture, for which it is best adapted. There are two principal ranges of mountains near the opposite extremities of the state. The eastern range, known as the Australian Alps, enters the state from New South Wales, where it runs south parallel to the coast. On entering Victoria it proceeds southwest, with diminishing height, to the coast at Wilson Promontory. This range has numerous ramifications north and west, covering an area estimated at 7,000 square miles. In Mount Bogong it rises to the height of 6,508 feet, in Mount Hotham to that of 6,100 and there are several other summits over 5,000 feet high. The western range, called the Grampians, lies in a direction roughly north and south, including the Sierra range on the east and the western or Victoria range, with their nucleus in Mount William (3,827 feet), at the northwest extremity of Ripon County. The Grampians and Australian Alps are distinctly connected by such ranges as the Pyrenees and the Great Dividing Range, and their united system forms a continuous watershed, sending the drainage north to the Murray or south to the ocean. The whole system has an extent east to west of about 300 miles, with breadths varying from 100 to 150 miles, and numerous cones and extinct (apparently submarine) craters, and is composed of metamorphic rocks of granite, syenite, quartz, etc., overlain by secondary and tertiary formations. This is the region of the gold-fields.

Hydrography.—The rivers are numerous, but seldom large. In the rainy season they overflow their banks, and in summer they dry up and leave the country parched. This is the great climatic disadvantage of Victoria. The most important river is the Murray, which from its source in the eastern mountains forms the boundary between Victoria and New South Wales, deriving most of its waters from the latter and skirting the whole state in a northwestern direction, finally flowing through South Australia into Lake Alexandrina. Its length is 1,700 miles, and it is navigable for several hundred miles. Another short navigable river is the Yarra-Yarra, on which, at its entrance into Port Philip Bay, Melbourne, the capital, is situated. Most of the other principal rivers are tributaries of the Murray, except the Snowy, which crosses the east part of the state. Lakes are numerous, but are small and liable to dry up, and often salt.

Climate and Natural Products.—The climate of Victoria is temperate and salubrious, but liable to sudden fluctuations, and the hot winds from the interior which blow at intervals from November to February cause great discomfort. The annual fall of rain at Melbourne is 27 inches. (For the chief animal and vegetable products native to the colony, see AUSTRALIA). Some of the common English quadrupeds and birds have been introduced, such as hares, rabbits, deer (foreign as well as English), goats, pheasants, quails, white swans, partridges, ducks, thrushes, larks, etc., and are now becoming quite plentiful. Rabbits have become so numerous in some localities as to prove a nuisance. Victoria has a valuable asset in its forests, now under government management. The annual cut is about $9,000,000 in value.

Agriculture.—Besides wheat, barley and oats, fruits, and especially the vine, receive attention. Of the 4,000,000 acres under cultivation, fully 2,000,000 are under wheat. Victoria promises to become a great wine country. Tobacco is also growing into a staple. Much money has been expended on irrigation and other waterworks. Sheep-farming, however, is the chief agricultural industry, together with horse and cattle breeding.

Industries, Commerce, etc.—The chief mineral production is gold, which was discovered in 1851. The gold discoveries were important not only to the then colony but to the world at large, as they made Australia for a time the chief source of supply. In 1852 the yield of gold in Victoria was 2,218,782 ounces, valued at $44,375,640; in 1856 the yield was 2,985,991 ounces, valued at $59,719,720. In 1900 the total yield of gold was 807,407 ounces, of the value of $16,148,140; since then the production has steadily reduced, being in 1918 about $5,000,000 in value. (See GOLD). Silver, tin, antimony, iron, limestone, granite and coal are also among the minerals worked. The antimony product has increased both in quantity and value, totaling over $400,000 in 1917. Half a million tons of coal are mined annually, valued at about $3 a ton. The staple product, however, is wool. In 1869 the value of the wool exported was $16,815,375; in recent years it has been as high as $30,000,000. The livestock reports of 1917 showed 12,577,000 sheep, 1,175,000 cattle and 515,000 horses. The total value of Victorian produce exported in 1868 was $58,489,465; in 1883, $66,461,470; in 1900, $87,112,760; in 1917, $95,000,000. The primary production in 1915 was $175,000,000 and with the manufactured value was over $100,000,000. The imports, in 1886, amounted to $91,652,875; in 1900 to $91,509,055, and in 1917 to $128,000,000. A very large proportion of the trade is direct with Great Britain. Manufacturing increases, there being in 1916 5,445 factories, employing 117,000 persons, with a capital investment of $71,000,000. Nearly all the vessels dock at Melbourne, where the annual clearances are about 7,000,000 tons.

Government, Finance, etc.—Victoria is divided into five districts and these into 37 counties. The districts are Gippsland, Murray, Wimmera, Loddon and Western. The executive is vested in the governor, who is also commander-in-chief of the state troops and is assisted by a ministry of 11 members. He is appointed by the Crown for six years and has a salary of £5,000. The legislative authority is vested in a Parliament of two chambers, the legislative council and the legislative assembly. The legislative council at present consists of 34 members, representing 14 provinces and holding office for six years. The legislative assembly has 65 members, representing electoral districts, and is elected triennially. Members are paid $1,500 a year in reimbursement of their expenses. A property qualification is required both for members and electors of the legislative council; the members of the legislative assembly are elected by universal suffrage. The revenue of Victoria amounted in the year 1917 to $59,000,000. The chief item of expenditure is railways and public works and there is a debt, contracted chiefly on account of these, amounting in 1917 to $380,000,000. In the year 1917, Victoria had 4,176 miles of railway opened, all belonging to the government of the state; 112,000,000 passengers were carried in the year and 5,963,000 tons of freight. The principal lines connect the leading towns, Melbourne, Geelong, Ballarat and Bendigo. There is telegraphic communication with the other Australian states and with England. There is a branch of the Royal Mint in Melbourne, where gold has been coined since 1872 and silver since January 1916. The 17 banks of the state have 682 branches and assets in 1916 of $317,000,000. The post-office and other savings banks had total deposits in 1917 of $141,600,000. The government of Victoria is protective and gives bonuses on manufactures, which have consequently made some progress. The breweries, tanneries, soap and candle works, woolen mills and meat-preserving establishments may especially be mentioned. There are numerous minor manufactures for the supply of local wants. Among religious sects the Church of England is most largely represented in Victoria, the Roman Catholic next and the Presbyterians third. Attendance at school is compulsory in Victoria between the ages of 6 and 14, the attendance to amount to 40 days in each quarter-year. In the state school, education is free in certain subjects and compulsory with certain exceptions. There are several colleges connected with various religious denominations, besides the Melbourne University. The number of technical schools is increasing.

History.— Little was known of this part of Australia at the end of the 18th century. In 1802, Port Philip Bay was explored and the country and bay were taken possession of for Great Britain, the name being given in honor of Captain Phillip, governor of New South Wales. A convict settlement was established the following year at Port Phillip, but was transferred to Tasmania (then called Van Diemen's Land) in a few months. Victoria was first colonized in 1834 and 1835 from Tasmania, after one or two other unsuccessful attempts from other quarters. It now made rapid progress, especially in breeding sheep, of which in 10 years it had 1,500,000. The population in 1846 amounted to 32,879. Melbourne had already become a municipality; in 1847 it was made a city and by 1850 the population numbered over 76,000. But the turning-point in its fortunes was the discovery of gold, which caused a rush of population from all parts. Hitherto it had been known as Port Phillip and formed part of the colony of New South Wales, but it was now erected into a separate colony under the name of Victoria. The present system of responsible government was introduced in 1856 and in that year also the first line of railway (Melbourne to Sandridge) was opened. Ballot voting dates from 1856, and in 1857 manhood suffrage became the basis of election for the lower house. International exhibitions are held in Melbourne usually every decade. The colony suffered much during the commercial depression of the early nineties of the last century, when several banks suspended payment. The act establishing free, secular and compulsory education was passed in 1873. An income-tax law came into force in 1895. A very advanced Factories and Shops Act was passed in 1896 and an additional one followed in 1900. These provide for the fixing of minimum rates of wages. Woman suffrage was adopted in 1908 and old-age pensions in 1909. Pop. (1911) 1,315,551; (1918, estimated) 1,405,000. Of these, in 1911 577,053 were breadwinners and 60 per cent lived in towns and cities. Consult Bannow, 'The Colony of Victoria' (1897); McCoy, 'Victoria and Its Metropolis' (1889); Turner, H. G., 'History of the Colony of Victoria' (London 1904); Gregory, J. W., 'Geography of Victoria' (Melbourne 1907), and government reports. See AUSTRALIA; MELBOURNE.

VICTORIA, vēk-tō'rē-a, Brazil, a fortified town and seaport, capital of the state of Espirito Santo, situated on the bay of Espirito Santo, 275 miles northeast by east of Rio de Janeiro. The town is regularly built and has fine streets and some striking buildings. A Jesuit college, founded in 1551, is used as the government palace. Victoria comes next to Santos and Rio as a coffee-exporting port. It is one of the oldest Portuguese establishments in Brazil and succeeded the town of Espirito Santo, which was founded in 1535, a short distance to the east-southeast, and was soon afterward transferred to a neighboring island. Pop. about 13,000.

VICTORIA, Canada, a city on Vancouver Island, capital of British Columbia, located on the Strait of Juan de Fuca, at the southeast end of the island. It is an industrial centre and also a beautiful residential city.

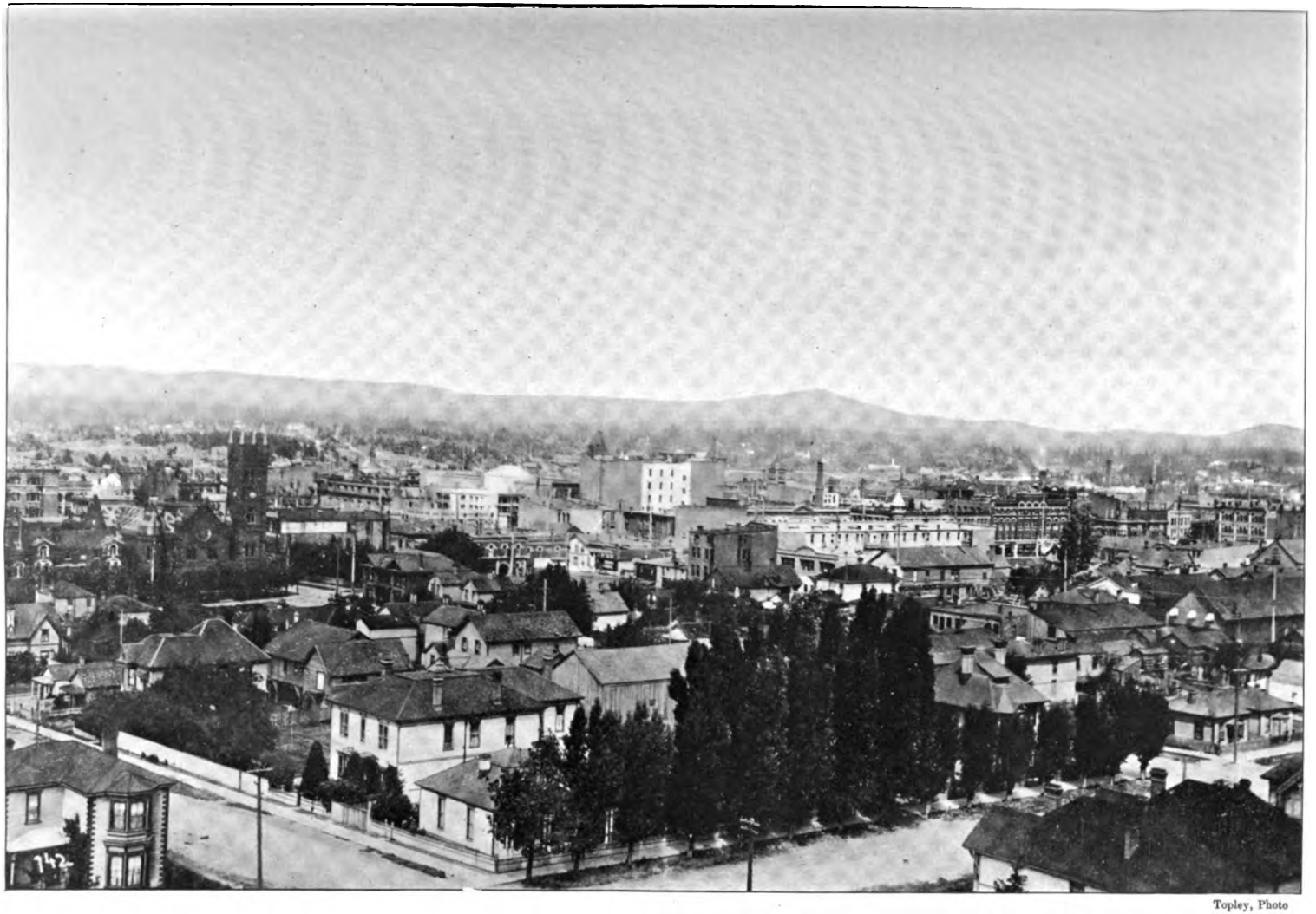
Railway and Steamship Connections.—The Canadian Pacific Navigation Company, the Victoria and Sydney Railway and the Esquimalt and Nanaimo Railway are important factors in the passenger and freight traffic of Victoria, while the Canadian Pacific steamers to China, Japan and Australia make it a port of call. There is also connection with Vancouver, the Puget Sound ports, San Francisco, the Fraser River ports and Alaska and ports in the Far East. The harbor was much improved in 1916 and 1917.

Agriculture.— The increase in home production in 1911 over 1910 amounted to $7,242,938; the estimated value of agricultural products, including livestock, in 1911, being $21,641,928.44, whilst in 1910 the figures were $14,398,900. The following figures are for 1911: Livestock, $3,648,512; dairy products, $4,280,462; meats, $743,017; fruits and vegetables, $5,084,241; eggs and honey, $290,285; miscellaneous: grain, hops, nursery stock, $7,595,411. The estimated totals for 1918 are fully 50 per cent greater.

Industries.— Victoria has certain contributory interests, such as lumber, mining, salmon-canning and deep-sea fishing, which keep it to the front in a commercial sense. Its port is the first one reached by ocean vessels and the shipping business of the island naturally finds its centre there as well as a considerable and increasing shipbuilding interest. During the year the vessels arriving and departing number 4,000. The starting of the Esquimalt dry-dock in 1880 and the maintenance of that suburb as one of the great British naval stations and as the fortified headquarters of the Pacific squadron until recent changes helped greatly in building up the prosperity and stability of the city. Among the business interests and industries are immense warehouses and docks, shipbuilding, hardware, breweries, boot, shoe and trunk making, soap factories, powder works, pickling and spice factories, chemical and metallurgical works, furniture and biscuit factories, flour, feed and rice mills, iron foundries and machine shops, etc. There are two daily newspapers and several monthlies.

Public Works, Banks, Revenues, etc.— The city has an electric street railway, lighting and telephone systems, waterworks (established in 1873) and a new system of sewerage. The banking facilities are excellent and include branches of the Bank of Montreal, Canadian Bank of Commerce, Bank of British North America, Royal Bank of Canada and Imperial Bank of Canada. A chamber of commerce was established in 1863 with R. Burnaby as its first president and was merged in the Victoria Board of Trade in 1880.

Public Buildings, etc.— The great event of later years in the city's annals was the construction of the splendid Parliament buildings which were opened with stately ceremony on 10 Feb. 1898. The cost was over $1,000,000, the building was of gray stone, the site was admirable, the grounds were afterward improved and beautified to a striking degree and the whole appearance of the structure was and is imposing. In it were established the Provincial Museum and the Provincial Library, the offices of the government departments and the handsome legislative chamber, panelled in Italian marble,



Topley, Photo

VICTORIA, BRITISH COLUMBIA

and echoing since then with many a vigorous debate and keen political controversy. Within the past few years a new government house has also been built as the residence of the lieutenant-governor. Of the other city buildings the Jubilee Hospital, the city hall, the custom-house and post office, the drillshed and Board of Trade buildings are the chief, with many churches and schools and several hospitals, orphanages, etc. With its splendid situation, its already large trade and substantial prosperity, and the public spirit pervading all classes of her citizens, Victoria's future as one of the important cities of North America is assured.

History, Population, etc.— The early history of Vancouver Island is a record of the work and business of the Hudson's Bay Company. In 1843 Fort Victoria (or Camosun as it was first called) was erected as one of the many trading posts with which that great company had dotted the continent from Lake Superior to the shores of Alaska. Two years later the first ship from England arrived at the fort and port. In 1850 the first British governor of the island arrived and one year later Victoria was surveyed and the preliminary work upon the future city commenced. Mr. (afterward Sir James) Douglas became governor of the island in 1851 as well as chief factor of the Hudson's Bay Company. Then came the Mainland gold excitement of 1858, the influx of miners, the gradual growth of population, the foundation of newspapers such as *The Colonist* (which is still in existence with daily and Sunday issues) and the taking over of the island as a Crown colony with gradually developed representative institutions. From this time forward the progress of Victoria was steady and sometimes rapid. It was incorporated in 1862; was the home of the first legislature of the island in 1856; became capital of the newly-constituted colony of British Columbia in 1868. From it Sir James Douglas directed the development which made him the Father of the Province and within its confines occurred the legislative debates and discussions which ended in the entrance of British Columbia into the Canadian Confederation in 1871. The first mayor of Victoria (1862) was Thomas Harris.

From that time until the present the characteristics of Victoria have remained the same although it has grown in population from 3,270 in 1871 to 5,295 in 1881, 16,841 in 1891, 31,660 in 1911 and 50,000 in 1917. It is an English town in appearance and customs and environment with a climate not unlike that of England. Its people are of English, Irish or Scotch extraction — chiefly English. The Chinese and Japanese number about 4,000. The Anglicans, Presbyterians, Methodists and Roman Catholics are the strongest religious bodies, but there are churches of all denominations.

VICTORIA, or **KWAN-TAI-LO,** kwän-tī-lō, the capital of the British Crown colony of Hongkong (q.v.), extends for upward of five miles along the southern shore of a beautiful harbor facing the peninsula of Kan-lung on the Chinese mainland. It is dominated by the Peak, a steep hill, on which are many fine residences and up which there are an inclined plane and steam-tramway. The chief buildings are the government house, city hall, Roman Catholic and Anglican cathedrals, the large commercial houses and warehouses extending along the quays, public libraries, hospitals and clubs. A public garden and a race course are maintained; the town is electrically lighted and has also gasworks and a good water supply. The population of Hongkong, about 366,000, is mostly massed in Victoria.

VICTORIA, Mexico, the capital of the state of Tamaulipas. See CIUDAD VICTORIA.

VICTORIA, Philippines, pueblo, province of Tárlac, near the outlet of Canarén Lake, 10 miles northeast of Tárlac. It is at the intersection of three roads. Pop. 10,362.

VICTORIA, South Africa, a town of southern Rhodesia, the centre of an auriferous district, 188 miles due south of Salisbury. It has the usual government buildings and a hospital and is protected by a fort. The climate is unhealthful during the rainy season. About 17 miles to the east are the famous Zimbabwe ruins, the relics of a very ancient exploitation of the gold in the territory. (See ZIMBABWE). Pop. about 25,000 natives and 100 whites.

VICTORIA, Tex., city and county-seat of Victoria County, situated at the head of navigation on the Guadalupe River and on the Galveston, Harrisburg and San Antonio and the Saint Louis, Brownsville and Mexico railroads, 127 miles west of Houston and 114 miles south of San Antonio. It contains jobbing and wholesale houses, modern retail establishments, three banks with deposits over $3,700,000. There are asphalted streets and the industrial establishments comprise cotton and oil mills, a broom factory, cotton gins, compresses and an ice factory. There are also electric-lighting and water systems. The city has a new modern high school with equipment for manual training, three large ward schools and two parochial schools. The city is the seat of Saint Joseph's College (R.C.), Nazareth Academy, the Bronte Library and courthouse. Pop. 3,673.

VICTORIA, a genus of plants of the natural order *Nymphæaceæ*, resembling the common water-lily, but most nearly allied to the genus *Euryale*, and distinguished from it particularly by the deciduous tips of the calyx, and the sterility of the innermost stamens. Only one species is known — *Victoria regia;* said to have been observed first by Hänke about 1801. It was described by Pöppig 1832, who observed it in the river Amazon; and it has since been found in many rivers of the northeastern part of South American. Its leaves are orbicular, float upon the water, and attain a diameter of from five to six feet; have the margin turned up, about two inches high; are of purplish color on the underside, and there exhibit a sort of wicker-work of very prominent veins, furnished with prickles. The flowers rise among the leaves upon prickly stalks; they are more than 12 inches in diameter, white, internally rose-colored, and very fragrant. The fruit is a capsule, almost globose, with a depression on the top, about half the size of a man's head, fleshy within, and divided into numerous cells, full of round farinaceous seeds, which are an agreeable food; the plant is, therefore, called *Maïs del Agua,* or 'Water Maize,' in parts of South America. For cultivation of this plant, special hot-houses have been built in some places

in Europe, and it has been introduced into India from seeds produced in England.

VICTORIA AND ALBERT, Royal Order of, a British order instituted for women in 1862, enlarged in 1864, 1865 and 1880. There are about 70 women belonging to the four classes into which the order is divided.

VICTORIA CROSS. A war decoration instituted 29 Jan. 1856, by Queen Victoria for the purpose of rewarding individual acts of bravery performed by officers of the lower grades in the naval or military service of Great Britain, or by "warrant and petty officers, seamen and marines in the navy, and non-commissioned officers and soldiers in the army." By a second warrant, dated 13 Dec. 1858, the honor was extended to non-military persons "who, as volunteers, had borne arms against the mutineers in India should be considered eligible, subject to the rules and ordinances," etc. An annuity of £10 is bestowed together with the

decoration. Reward for any further act of exceptional bravery is presented in a bar being attached to the ribbon by which the cross is suspended, carrying with it an additional annuity of £5 with each bar. The Victoria Cross annuity of £10 may, in particular cases, be extended to £50. The present state of the Victoria Cross donation permits its award to civilians for acts of exceptional heroism in times of war. The decoration consists of a Maltese cross of bronze and was made from Russian cannon captured at Sevastopol (September 1855). The centre contains a royal crown surrounded by the British heraldic lion *gardant*. Below, on an escroll, is borne the inscription "For Valour." The reverse side of the bar bears the rank and name of the recipient. On the cross is inscribed the name and date of the "action" or campaign in which the honor was won. The clasp above, which is decorated with two horizontal branches of laurel, has a V appendage, into the orifice of which is inserted the ring by which the cross is suspended. The cross is borne on the left breast suspended by a ribbon, blue for the navy, red for the army. The Victoria Cross is the most coveted of all the British military or naval orders. By 1913 there had been 522 Victoria crosses awarded; toward the end of 1918 the number had been extended so as to include about 670 recipients surviving from former periods, those conferred during the late war still living, and those whose death had occurred subsequent to its conferment.

VICTORIA FALLS, called by the natives Mosi-oa-Tunya ("smoke sounds there"), the greatest falls in the world, on the Zambesi River in Rhodesia, South Africa, about 100 miles below Kazungula and the confluence of the Kuando with the Zambesi. The falls extend, in four main cataracts, over a breadth of more than a mile, the mass of water falling from a height of over 400 feet. The transverse chasm or rocky fissure, 400 feet deep, into which the Zambesi plunges, extends straight across the course of the river, like a gigantic trough, a mile long and from 100 to 300 feet wide, the walls being composed of hard basalt. From this fissure great columns of cloud-like spray rise to a distance of 1,000 to 3,000 feet, according to local atmospheric conditions, and are visible on a clear day 10 miles or more from the Falls, whilst the thundering roar of the Falls themselves can be heard at a distance of 20 or 30 miles. The spray clouds coupled with the noise gave rise to the native name of "Mosi-oa-Tunya." There is only one narrow outlet to the chasm, about 200 feet wide, through which the mile-wide waters of the Zambesi have to force their way into what is called the "boiling pot," owing to its whirlpool out again into a broad river which flows on, broken here and there by small rapids and cascades, until it pours itself into the sea some 1,000 miles away. One of the highest bridges in the world, with a span of 650 feet, crosses the gorge, a quarter of a mile below the Falls, from which, however, the Falls are hardly visible, the bridge being almost at right angles to them. A commodious hotel has been built for the immediate accommodation of visitors and a township called Livingstone has been laid out on the north bank of the Zambesi about four miles distant. Livingstone, the great African explorer, was the first European to see the Falls, which he named after Queen Victoria. On the brink of the main cataract an island on which he camped in 1855, the year of his great discovery, has been named after him and the tree on which he carved his initials still remains. Other islands above the Falls have been named "Princess Christian," "Princess Victoria" and "Kandahar" in honor of some of the more recent visitors.

Great care is being taken by the British South Africa Company to keep the beauty of this valuable asset of their territory free from the ravages of vandalism.

VICTORIA LAKE, or **ALEXANDRINA,** or **KAYINGA LAKE:** brackish lagoon in the southeast of South Australia; separated from the sea by a narrow strip of land. It receives the rivers Murray, Bremer, Angus and Finnis; and communicates with the sea by a narrow passage into Encounter Bay. It is 30 miles long and about 12 miles wide. The entrance to the lake is obstructed by a sand-bar.

VICTORIA LAND, Arctic Regions: the southernmost portion of an insular tract of Franklin Territory, Canada, constituting with Prince Albert Land and Wollaston Land, an island in the Arctic Ocean, with an area estimated at 80,000 square miles. The island is separated from the mainland by Dease Strait, Dolphins Union, and Victoria Strait. Victoria Land was discovered and named by Sir George Simpson, and was explored by Dr. Rae in 1851.

VICTORIA LAND, or **SOUTH VICTORIA LAND,** Antarctic regions, a vast continental plateau south of New Zealand, extending from latitude 71° to the South Pole between longitudes 160° to 170° E. Victoria Land was discovered and named by the British navigator Sir James Clark Ross during his voyage of exploration, 1841–42, when he sailed along a rocky icebound coast for 450 miles, finding in lat. 78° 10′ S. a lofty active volcano 12,367 feet high and an inactive cone over 11,000 feet high, which he named respectively Erebus and Terror, after his vessels. The loftiest point of land is Mount Melbourne, which attains a height of over 14,000 feet. Since the expedition of the *Belgica* (1897–99) and of the British expedition (1898–1900) under the command of the Norwegian, Borchgrevink, Swedish, German and British expeditions have added considerably to the knowledge concerning the meteorological and other conditions of the region. The British Antarctic expedition which sailed on the specially built and equipped steamship *Discovery* from London 31 July 1901 returned to Lyttleton, New Zealand, 1 April 1904 in company with the relief steamers *Morning* and *Terranova.* The *Discovery* had been frozen in for 13 months at the foot of Mount Erebus. Scientific work had been maintained throughout the whole period. At Cape Adare Borchgrevink's huts were found in good preservation; a new route to the west was discovered and a depot was established 2,000 feet up the glacier. In a dash to the South Pole, Captain Scott, Dr. Wilson and Lieutenant Shackleton (q.v.) reached lat. 82° 17′ S., further progress being impeded by the softening of the snow and the death of their dogs. The fact was established that the interior of Victoria Land continued at a height of 9,000 feet and is evidently a vast ice-covered continental plateau. (See ANTARCTIC REGIONS). Consult Borchgrevink, 'First on the Antarctic Continent' (1901); Bull, 'The Cruise of the Antarctic to the South Polar Regions, or the Voyage to Victoria Land, 1894–95' (1896); Cook, 'Through the first Antarctic Night, or the Voyage of the *Belgica*' (1900) and reports of the South Pole discovery.

VICTORIA NYANZA, nī-ăn'za, or **UKEREWE,** oo-kĕ-rĕ'wĕ, central Africa, the largest of the Nile lakes and the second in size of the fresh-water lakes of the world, extends from 0° 45′ N. to 2° 50′ S., and from 32° 30′ to 35° E., and lies about 3,900 feet above sea-level, between British and German East Africa. Since 1901 a railroad with its terminus opposite Uvuma Island, near the northeast shore, connects the lake through British East Africa with Mombasa on the east coast and through German East Africa a line is being laid to connect Mwansa on the south shore with Tabora, on the railroad running westward from Dar-es-Salaam on the east coast to Ujiji on Lake Tanganyika. Including the numerous islands with which it is studded, Victoria Nyanza has an area estimated at 27,000 square miles. In the southeast the largest island, Ukerewe, by which name the lake is locally known, is 25 miles long with a maximum breadth of 12 miles, but is uninhabited. In the Sesse Archipelago in the northwest are a British government station and Catholic and Protestant missions. A few steamers and dhows ply on the water. The lake receives numerous inflows, the most important of which is the Kagera, the head-stream of the Nile (q.v.), which enters it on the west. Other tributaries of the lake are the Katonga on the west, the Nzoia on the northeast, the Shimiyu on the south and the Ruwana on the southeast. The lake is supposed to be partly fed by springs. The outlet of the lake, or Somerset Nile, which flows northwest to the Albert Nyanza, whence it issues as the Nile proper, was discovered by Speke on 28 July 1862. While the western shore of the lake is mostly flat, and the northern in many places marshy, the eastern shore presents high mountains. The Victoria Nyanza was discovered by Speke, who caught sight of its southern end near Mwansa on 4 Aug. 1858, and it was afterward, in 1861–62, visited and further explored by its discoverer, along with Grant, and between January and May 1875 it was circumnavigated by Stanley.

VICTORIA REGIA, a magnificent water-lily, of gigantic size, which is found in South American streams, especially in the tributaries of the Amazon. It was discovered by Haenke in Bolivia in 1801 and, later, was introduced with great difficulty to horticulture. The first flower that bloomed in England was presented to Queen Victoria, in honor of whom the genus was named. The Indians of British Guiana called it the water-platter, in reference to its remarkable floating leaves, which are six feet or more across, and are circular with an upturned rim several inches high. These gigantic leaves are orbicular-peltate and provided with prickly petioles longer than the depth of the water on which they float — an apparent provision against submersion by changes in river level. The leaf-tissues are full of air-spaces and canals, which render the leaves so buoyant that they can support from 100 to 200 pounds of weight; the crimson under-surface is reticulated with many veins, protected by stout, fleshy prickles. The leaf also is punctured with minute holes, possibly for the escape of water from its fenced-in upper surface. The water-lily-like flowers are more than a foot across, nocturnal and open on two successive evenings. The first time a Victoria opens the inner petals over the stigma remain unexpanded and the flowers are creamy white, with a delicious fragrance. It closes the next forenoon, to open again at dark, this time expanding to its fullest extent, but has become rose-red in color and with a disagreeable odor. The flower is then closed forever and is withdrawn beneath the surface of the water. The fruits are like peas, hidden in the cells of a dilated torus or globular prickly capsule about as large as a cocoanut and the starchy nuts are called "water-corn" in Paraguay, where they are used for food. The Victoria is found in shallow inlets,

lakes and pools in bogs and has tuberous vertical rhizomes moored by stout, spongy roots. It is easily cultivated in greenhouses or in outdoor heated tanks.

VICTORIA UNIVERSITY, England. See OWENS COLLEGE.

VICTORIA UNIVERSITY, formerly situated at Cobourg, Ontario, Canada, now at Toronto, and since 1890 in federation with the University of Toronto. It was founded by resolution of the Conference of the Methodist Church in Canada, held at Kingston in 1830 and was incorporated by royal charter in 1836 under the name of "Upper Canada Academy." This royal charter was the first ever granted by the English government to a Non-Conformist body for an educational institution. In 1841 the charter was extended by the Parliament of Canada, the name was changed to Victoria College and power was given "to confer degrees of Bachelor, Master and Doctor of the various Arts and Faculties." On 21 Oct. 1841 the first session of the college under the enlarged charter was opened, with the Rev. Egerton Ryerson as principal, and with a full arts curriculum. In 1854–55 the faculty of medicine was added and established in Toronto. In 1860 the faculty of law and in 1871 the faculty of theology were added. In 1883–84 Albert College, Belleville, was united with Victoria College and the name was changed to Victoria University. The Ontario Ladies' College, Whitby, Alma College, Saint Thomas and Columbian Methodist College, New Westminster, British Columbia, have since that time been affiliated. On 12 Nov. 1890, by proclamation of the lieutenant-governor, Victoria University was federated with the University of Toronto. (See TORONTO, UNIVERSITY OF). New buildings were erected in Queen's Park, Toronto, and the federation was consummated in 1892. The faculty of arts then assumed the work and relation of a college in the University of Toronto, teaching such subjects as were assigned by the Act of Federation to the colleges. For all other subjects the students have access to the lectures and laboratory practice of the University of Toronto under the regulations of which all degrees, except those in divinity, are conferred. In addition to the work in arts above mentioned provision is made for courses in theology, both elementary and advanced. The staff consists of 17 professors and lecturers and the number of students registered annually is about 375. There is also a Victoria University in Manchester, England, and in Wellington, New Zealand.

VICTORIAN ARCHITECTURE. See ARCHITECTURE.

VICUNA, Manuel, Chilean Roman Catholic prelate: b. Santiago, Chile, 1778; d. Valparaiso, Chile, 1843. He was graduated in theology from the College of San Carlos, was ordained to the priesthood and engaged in traveling missionary work. He inherited a large fortune which he used in his charitable work, employing a considerable share of it in building a house of retirement. In 1830 he was made a bishop and in that capacity labored earnestly for the re-establishment of the theological seminary. In 1840, when Santiago was made a metropolitan see, he became the first archbishop. He subsequently served as a member of congress of the council of state.

VICUNA, Pedro Felix, Chilian journalist: b. Santiago, Chile, 1806; d. there, 1874. He was well educated and entered journalism at an early age, becoming at 21 one of the founders and editor-in-chief of the Valparaiso *Mercurio.* He was subsequently connected editorially with *El Telégrafo* (1827); *El Elector* (1841); *El Republicano* (1845), *La Reforma* (1847), and other leading periodicals, and in 1865 was elected to the national Senate, where he introduced the law abolishing imprisonment for debt. He wrote 'Unico asilo de las Repúblicas Hispano-Americanas' (1837); 'Porvenir del Hombre' (1858) and 'La Hacienda Pública' (1864).

VICUNA, a species of wild llama (*Lama vicunna*) which lives in the most inaccessible and precipitous portions of the Andes near the snow-line from Peru to Bolivia, and is generally seen in small herds. It is described as being very wild and vigilant and is much hunted for the wool and hide. The domesticated alpaca (q.v.) is by some naturalists considered to be an offshot of the vicuña, though there is much reason to doubt this. See LLAMA.

VICUNA-MACKENNA, mäk-kā'nä, **Benjamin,** Chilian historian: b. Santiago, Chile, 25 Aug. 1831; d. Santa Rosa del Colmo, Chile, 25 Jan. 1886. He was educated at the University of Chile and early engaged in researches in national history. For his activity in the Revolution of 1851–52 he was imprisoned and condemned to death, but escaped to this country and then went to Europe. In 1856 he returned and was admitted to the bar, but political disturbances caused his exile in 1859–63. Upon his return in the last-named year he became editor of the Valparaiso *Mercurio,* in 1864 was elected a deputy and in 1865–66 was special envoy to Peru and to the United States. He was senator in 1871–76 and in 1875 he was a candidate for the Presidency. His works include 'El Sitio de Chilian en 1813' (1849); 'Revolución del Perú' (1861); 'Historia de la Administración de Montt' (5 vols., 1862–63); 'Historia de Valparaiso' (2 vols., 1868); 'Historia de las Campañas de Arica y Tacna' (1881); 'Al Galope' (1885), etc.

VIDAL, Arnaud, a French poet active in the 14th century. He was closely connected with the literary movement in the South and was the first to win the golden violet of the college of the *gaie science* (1324) at Toulouse. He took for his subject the praise of the Virgin, a copy of which is still preserved in the records of the Academy of Toulouse. In the same year he was honored by the same society with the title of "doctor of the gay science" (poetry) for another poem on the same subject. Vidal became a very popular poet and set a style of Virgin-homage which was largely imitated. He thus had considerable influence on the poetry of his day.

VIDAL, Pierre, a Langue d'oc troubadour who flourished during the latter part of the 12th and the first part of the 13th century. He was one of the foremost poets of his time, the ideal lover, adventurer, singer and song-

maker, in which his age delighted. His poetic passion was frequently allied to madness and he himself finally died insane. Good living, good fortune, adventure were his constant aim in life and his themes in song. Endowed with a fine poetic talent and a magnificent singing voice, he was welcomed everywhere throughout the Provençal lands as a troubadour second to none in grace, courtliness and lyrical gifts. The most powerful princes and nobles and the most brilliant and high-born ladies were his patrons, paying homage to his charm of manners and his uncommon talent. During his adventurous life he went with Richard Cœur de Lion to Palestine. It was during this period that he seems to have gone gradually mad. His later poems show this change in the once gay singer of love ballads. In these he imagines himself a great hero, feared by the Saracens. Thus he sings "My enemies tremble at my name, like the quail before the hawk, so well do they know my redoubtable valor. I have all the graces of chivalry; I know all the ways and practices of love. When I put on my shining armour and girt about me my sword, the earth trembles beneath my feet. Armed and mounted on my good steed, I bear down all before me. Single-handed I have taken prisoner a hundred knights; and a hundred others have I disarmed." His companions, playing upon his infirmity, had him married to a Greek woman, representing to him that she was the niece of the emperor of the East. Believing himself heir to a great kingdom he composed songs celebrating his high estate. On his return to France, after the failure of the Crusade, he committed other insane acts which gained him the title of the mad poet. Yet, with all his madness, there is a real wealth of imagery and imagination in his poems which makes them readable to-day; for he was master of his art. He ventured into poetic forms little or not at all used by his fellow-craftsmen, and successfully made very difficult poetical departures from the usages of his times. A very considerable number of his manuscripts of poems have been collected, and they all tend to confirm the high estimation as a poet in which he was held by his contemporaries. In addition to love poems, his surviving work contains three interesting poetical compositions on the Crusades, a tenson composed for a troubadour poetical contest and a historical poem. All of these exhibit the same strange erratic talent coupled with eccentricities of metre, rhythm and rhyme that fitted in well with the abnormal life of the author himself. Consult Ginguené, 'Histoire littéraire de la France'; Soulié, F., 'Viscomte de Béziers'; and also the works of Nostradamus, Raynouard, Rochegude, Sainte-Palaye.

VIDAL, Raymond, a Provençal troubadour of the 12th and 13th centuries. He is said to have been the son of the more famous Pierre Vidal; but Abbé Rive maintains that he was not his son but his father. Tradition says that he lived at the court of Alfonso X of Castile (1252–84). Vidal was the author of a Provençal grammar that seems to have been popular in his day and also at a later date. He also wrote 'Patience in Love' and also 'Jaloux Chatie,' both in the style of the prevailing "nouvelles."

VIDAURRI, vē-thowr'rē, **Santiago,** Mexican soldier: b. Nuevo Leon, Mexico, about 1803; d. City of Mexico, 8 July 1867. He came of a wealthy family of Indian extraction, was well educated, admitted to the bar in 1826 and entered political life. He was engaged in several civil wars, rose to the rank of colonel and in 1852 was elected governor of Nuevo Leon. He assisted in the overthrow of Santa Anna in 1854–55, though refusing to act in conjunction with Alvarez, and was an unsuccessful candidate against the latter for the Presidency in 1855. He assumed a species of dictatorship over the states of northern Mexico, forcibly annexed Coahuila and was long suspected of a design to establish a separate republic. He withheld recognition of Comonfort as successor of Alvarez until 1856, but was then forced to grant it in order to retain his control of the states Nuevo Leon and Coahuila. He at first participated in resistance to the French intervention in 1862–64; later became an officer in the Cabinet of Maximilian. He resigned in 1867, but after the fall of the City of Mexico he was captured and shot as a traitor.

VIDIN, Bulgaria. See WIDDIN.

VIDOCQ, vē-dŏk, **Eugène François,** French adventurer and detective: b. Arras, France, 23 July 1775; d. 10 May 1857. He was apprenticed to his father, a baker, at 13, and after constant pilfering robbed the shop of 2,000 francs and fled to Ostend. He soon lost his money and after living a life of vagabondage entered the French army, from which he deserted to the Austrians, but later returned to the French army. His career as a soldier was one of miserable intrigue and disgraceful adventure and he was finally implicated in a forgery for which he was sentenced to eight years' imprisonment. He escaped and after further discreditable escapades settled in Paris, where he gained employment on the secret police force. His wide knowledge of the criminal classes enabled him to render efficient service and in 1812 he was made chief of the *brigade de sureté.* His activity in the service cleared Paris of great numbers of the criminals with which it was infested, but in 1827 he was removed from office. His subsequent career was one of obscurity and failure, though he apparently endeavored to live an honest life and he died in wretched poverty. His 'Memoires' (1828) are not regarded as authentic.

VIDYASAGAR, Iswar Chandra, Indian author, philanthropist and social reformer: b. in the autumn of 1820 at Birsinha in the district of Midnapur, Bengal, India; d. 30 July 1891. He was a Brahmin by birth. His father, the Kurdas Bandopadhya, was a poor man. When Iswar Chandra was nine years old, his father took him to Calcutta. They walked their way to the metropolis — such was their poverty. The boy was educated in the Sanskrit College, and in all examinations he used to be invariably at the top of his class. At this time, he suffered from extreme poverty. Quite often he was forced to go without even proper food and clothing. He received the title "Vidyasagar" (the ocean of learning) in 1840. Popularly, he is called in India, "Danver Sagar" — the ocean of kindness. His first work in Bengali prose,

'Betal Pancha Bingshati,' was published in 1847 and his 'Sakoontala' in 1855. But his masterpiece, 'Sitar Banawbash' ('The Banishment of Sita') was published in 1862. Raja Ram Mohun Roy, Iswar Chandra Vidyasagar and Akshya Kumar Datta were the fathers of Bengali prose. Vidyasagar was appointed as the Head Pandit of the Fort William College in April 1841 and the first principal of the Sanskrit College in January 1851. Apart from his scholarship, Vidyasagar was well known as a social reformer. He was the originator of the movement for the remarriage of Hindu widows. He proved from Hindu scriptures that there was no injunction against such marriages. He published his 'Remarriages of Hindu Widows' in 1855. He was vehemently attacked by the orthodox Hindus. Even his life was threatened. In this fight against orthodoxy, he was supported by two prominent men, Prosonno Kumar Tagore and Ram Gopal Ghose. Ultimately, the Widow Remarriage Act was passed in 1856. The extreme poverty of his boyhood and early youth, instead of turning him into a miser, as is sometimes the case, made him a philanthropist. And it is as the benefactor of his people that the people of India cherish his memory. He gave away most of his income in charity. He supported scores of poor students and hundreds of poor widows and helped thousands of persons of all classes. To give higher education at a reasonable cost, Vidyasagar opened, in 1872, the Metropolitan College of Calcutta, entirely at his own expense, and the income from the college he used for the improvement of the institution. This college still stands in Calcutta as a living monument to the memory of this great man.

VIEBIG, fē'bĭk, **Clara,** German novelist and writer of short stories: b. Trèves, 17 July 1860. When she was nine years old, her father, a Prussian oberregierungsrat, was transferred and the family went with him to his new post at Düsseldorf, where her girlhood was spent; but she frequently returned to the Moselle scenery at Trèves and in the environment, in which she took many tramps. Her father died when she was hardly of age and she was sent to live on the estate of some relatives in Posen. She went to Berlin to study music, but instead found that the stimulus of the great city, in addition to the landscapes she had already seen, was beginning to destine her for a literary career, on which she embarked in 1894. After marrying the publisher, Fritz Th. Cohn (a partner in the firm of Fontane and Company, later of Egon Fleischel and Company), she lived most of the time in Berlin and its suburbs (Schöneberg, Zehlendorf). In Germany she is the most popular of the representatives of the Zola school of naturalistic novelists and is particularly able in the powerful description of atmosphere and environment. Her delineation of sensual passion is excellent, when she is at her best, but she often descends to inartistic and careless production, reminding us sometimes of the backstairs novel. Her language is serious and unadorned and her treatment of her materials for the most part matter-of-fact and craftsmanlike. While her subjects are faced boldly and completely, she is sometimes governed more by the desire to produce what the market requires than what an inner urge would dictate. None of her works has so completely caught the spirit of the times as her novel of Berlin servant life, 'Das tägliche Brot' (1901). She has also written dramas, which have met with little success. Other works are 'Kinder der Eifel' (1897); 'Das Weiberdorf' (1900); 'Die Wacht am Rhein' (1902); 'Des schlafende Heer' (1904); 'Einer Mutter Sohn' (1907); 'Das Kreuz im Venn' (1908); 'Das letzte Glück' (1909); 'Die vor den Toren' (1910); 'Das Eisen im Feuer' (1913). Consult 'Ausgewählte Werke' (6 vols., Berlin 1911); 'Burning Love' is the title of a short story in English translation in 'German Classics' (Vol. XIX, New York 1914); also Werner, Richard M., 'Vollendete und Ringende' (Minden 1910).

JACOB WITTMER HARTMANN.

VIELE, vē'lę, **Egbert Ludovickus,** American soldier: b. Waterford, N. Y., 17 June 1825; d. New York, 22 April 1902. He was graduated from West Point in 1847, engaged in the Mexican War in 1847–48 and in the Indian warfare of 1848–52. He resigned from the army in 1853 with rank as lieutenant and in 1854–56 was chief engineer of the State of New Jersey. He was chief engineer of Central Park, New York, in 1856–57 and later of Prospect Park, Brooklyn. At the outbreak of the Civil War he entered the army and was appointed brigadier-general of volunteers. He was second in command of the land forces at Port Royal and held chief command at Fort Pulaski, Ga., planned and conducted the march to Norfolk, Va., and participated in the capture of that city. He was military governor of Norfolk in 1862–63. He afterward continued the practice of his profession in New York, was appointed park commissioner in 1883 and president of the board of commissioners in 1884. He served in Congress in 1885–87. He wrote 'Handbook of Active Service' (1861); 'Topographical Atlas of the City of New York' (1865), etc.

VIELE, vē'lē, **Herman Knickerbocker,** American novelist: b. New York, 31 Jan. 1856; d. there, 14 Dec. 1908. He studied engineering with his father and practised as a civil engineer for some time in Washington, D. C. He has written 'The Inn of the Silver Moon' (1900); 'The Last of the Knickerbockers' (1901); 'Myra of the Pines' (1902); 'On the Lightship' (1909).

VIEN, vē-ŏń, **Joseph Marie,** French painter: b. Montpellier, 18 June 1716; d. Paris, 27 March 1809. He was a pupil of Natoire, went to Rome (1744) and returned to open a school of painting in Paris (1750). In 1775 he was director of the Academy at Rome but returned to Paris. Napoleon I made him senator and ennobled him. His chief works are 'Saints Germain and Vincent'; 'Dædalus and Icarus' and 'Cupids at Play' (all in the Louvre). His principal claim to importance lies in the fact that he was the teacher of David.

VIENNA, vĭ-ĕn'ą (German, WIEN, vēn), capital of German-Austria, formerly capital of the Cisleithan part of the Austrian-Hungarian monarchy and in earlier times capital of the Austrian Empire, on the right bank of the Danube and on the Donaukanal, a narrow arm of the river, into which fall several small streams, 380 miles south by southeast of Berlin and 650 miles east by south of Paris. It

stands in a plain with the conspicuous Wiener Wald Mountain boundaries at 10 or 12 miles, distance on all sides. Most of the city rises from the right bank of the Donaukanal, on a considerable acclivity. The nucleus of the city, the Innere Stadt, comprising a small part of the whole, was formerly surrounded by a rampart, fosse and glacis, but these were leveled in 1857 and the space occupied by the Ringstrasse, a handsome boulevard averaging 55 yards broad, forming one of the finest thoroughfares in Europe. The inner or old town was the court and fashionable quarter of the city until the disruption of the dual monarchy occurred in 1918. The streets here are often narrow and crooked; but on the whole Vienna is a handsome well-built town, with fine squares and spacious streets well kept. The houses are frequently built four or five stories high and occupied in flats with common stairs. The chief public park is the Prater, on the island between the Donaukanal and the river itself, about four miles long and two broad, beautifully laid out, planted and decorated. Vienna's mean height above the sea is 560 feet; lat. 48° 12′ N.; long. 16° 22′ E.; area, 105½ square miles; population, 30 June 1914, estimated at 2,149,800. More than four-fifths of the inhabitants are of the German race and the German language is everywhere spoken. The remaining one-fifth is composed mainly of Slavs and Hungarians. Seven-eighths of the entire population are Roman Catholics. Protestants number between 70,000 and 80,000; Jews between 170,000 and 180,000.

A general idea of Vienna as a whole is given most conveniently when we mention leading features of each of the 21 districts into which the city is divided. Thus in the first district, embracing both Altstadt and Ringstrasse, we find Saint Stephen's and the Hofburg — near which are the chief government offices; the two great museums and most important banks; the famous street known as the Graben; the Reichsrath building, the Rathaus and the university; the opera-house and the Hofburg Theatre. The second district was, in 1623, assigned to the Jews; and a part of it is still inhabited by Jewish tradesmen; but another portion is devoted to the very extensive park called the Prater, which is particularly damp toward evening, owing to the close neighborhood of the Danube, but otherwise remarkably attractive. It was once an imperial deer-park, but since 1776 has been opened to the public. In the third and fourth districts an aristocratic quarter, Wieden, supplements that of district number one. The 5th, 12th, 14th and 15th districts are given over to the minor industries; the sixth and seventh to larger factories and shops. The eighth district is the quarter of officials and clerks; the ninth of hospitals and university institutes; the 10th of Bohemian factory-hands. The 11th includes the central cemetery, factories, gas and electric works and large market-gardens. The 16th and 17th are manufacturing districts. The 13th district includes Schloss Schönbrunn; the 18th and 19th the villa quarters and a wine-growing region. Manufacturing is carried on in the districts numbered 20 and 21.

Industries and Commerce.— Vienna is the foremost city in all the region formerly embraced in the Austrian Empire. Its manufactures include woolen, cotton and silk goods, leather, porcelain, arms, musical instruments, hardware, furniture, chemicals, pottery, beer, machines, tools, scientific instruments and gold, silver, bronze and tin wares. Especially important articles of commerce are grain, wine, cattle, coal, iron, flour and books and art publications. There is also a large inland trade. It is the centre of a great railway system. The diversion and deepening of the channel of the Danube, which brings the river nearer the city, has largely increased its shipping trade between eastern and western Europe. It has been well said that, as a commercial centre, Vienna owes its importance to its location at the point where trade-routes from the Baltic to the Adriatic cross the great highway of the Danube.

History.— Vienna appears to have been a Roman station in the 1st century. It was afterward included in Upper Pannonia and received the name of Vindobona. It was taken and pillaged by Attila about 450. It was conquered by Charlemagne about 791, became the capital of the Margraviate of Austria in the 12th century and municipal privileges were conferred upon it in 1221. In 1278 it became the seat of the Hapsburg dynasty. About 1365 the university was founded. During the 14th and 15th centuries a share in civic government was obtained by the craftsmen. In 1515 Emperor Maximilian I entertained at Vienna the king of Hungary and Bohemia and concluded marriages of his children, by which Hungary, Bohemia and Moravia were acquired by Austria. In 1529 Vienna was besieged by the Turks under Soliman II, and again, in 1683, it was defended against a Turkish army under Mohammed IV. During the reigns of Charles VI (1712–40) and Maria Theresa (1740–80) the city's prestige was enhanced and its population more than doubled. After the battles of Austerlitz and Wagram it was held by the French for a short time. From 16 Sept. 1814 to 19 June 1815 the famous Congress of Vienna was in session, and the opinion has been repeatedly expressed that the political reaction which followed retarded the prosperous development of the city, which then had but 239,300 inhabitants, and that the insurrection of 1848 was required to clear the way for the introduction of better conditions. The facts which claim our attention at present are these: Vienna secured the right of self-government by elective representatives at the accession of Emperor Francis Joseph, whose reign extended from 2 Dec. 1848 to 21 Nov. 1916. Activity in building was stimulated by the removal of the fortifications in 1857 and by the Exhibition of 1873. Other manifestations of an enterprising spirit were noted and in half a century the population has nearly quadrupled. This growth has taken place despite the Compromise of 1867 between Austria and Hungary, by the terms of which Budapest was made the capital of that part of the empire beyond the Leitha River which Vienna had long regarded as a political and social dependency. The two decades before the World War witnessed such developments as that of the transportation system, including the city railway and a network of surface lines, new waterworks, etc. A brief account of

conditions in Vienna while the war was in progress is supplied by a resident, who writes that Vienna heard little of the actual fighting. «The city is (in June 1917) full of people who seem bent on enjoyment, the cafés — where conversation about the war is taboo — are full of people from morning till night, the restaurants, where everything except bread and potatoes can be obtained, if one's purse is long enough, are crowded; the opera and the theatres have nearly every seat booked in advance and the cinemas are filled at every performance. In the fashionable streets of the city there are on all sides fine shops full of the latest fashions which find purchasers even at the prevailing exorbitant prices.» In the *Living Age*, 15 Dec. 1917, another correspondent writes: «But to the keen observer there are many curious differences which show how deeply the stupendous war has affected Vienna. The question which touches the whole population, from the highest to the lowest, most nearly is that of the food-supply. The state of semi-starvation at which the poorer classes have now arrived has come on so gradually that they have almost come to regard it as natural and have ceased to wonder at it.» In August 1918 Italian airmen commanded by Capt. Gabriele d'Annunzio dropped copies of a manifesto over Vienna, the message telling of American participation in the war. In November 1918 conditions in Vienna were reported as follows: Little disorder; order being maintained by Marshal A. von Boog; many arrests on charges of conspiracy with Red Guards to proclaim Bolshevist government; desperate conditions there owing to lack of food and coal. Austria had meanwhile appealed for an armistice (29 Oct. 1918); the abdication of Emperor Charles was announced 12 November and the German-Austrian republic proclaimed the same day. It was in connection with these events that the revolutionary outbreak took place at Vienna, the soldiers forming Soviets and making demonstrations against the Hapsburgs. On 16 Feb. 1919 the Constitutional Assembly was elected. On 4 Sept. 1919 the Swiss Minister at Vienna brought to light a plan to restore commercial relations on a large scale between Vienna and New York.

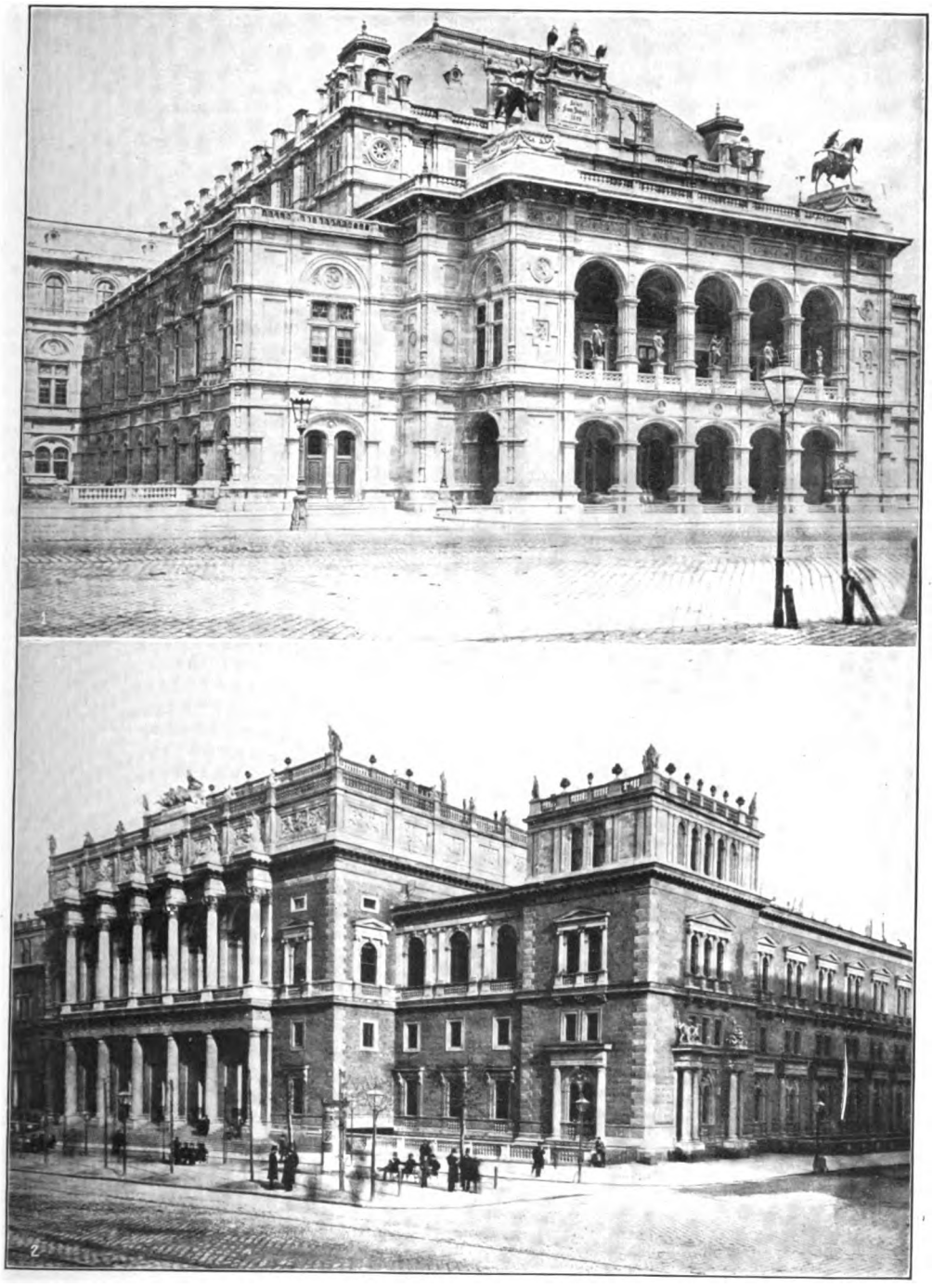
Architecture, Painting and Sculpture.— Only a few buildings dating from the period of the Middle Ages still remain, chief among which is the towering mass of Saint Stephen's (12th to 15th centuries), one of the most famous of cathedrals. The other architectural periods are distinguished as follows: That of the 17th century, mainly ecclesiastical; that of the 18th, baroque-palatial; the Biedermaier period, promoted by Francis I and Ferdinand I; the Francis Joseph era; and the modern period, commencing about 1900, examples of which are the 20th century residences of private citizens, the new palaces, the city railway structures, the cottage quarter and the artists' colony buildings in Heiligenstadt. But after all it is the «Ring,» with its monumental buildings, which gives the peculiar tone to Vienna, and the most beautiful edifice on the «Ring» is the Votive Church, completed in 1879. This appears to be the original from which was taken the design of Saint Patrick's Cathedral, New York City.

Painting, according to Bénédite developed in Vienna under the influence of foreign schools, of which those of Germany and France predominated. It follows that there is no precisely national Austrian art, but rather an intense and eclectic production of talents that are often distinguished but rarely personal and original. The early Vienna painters may well pass for Germans. Thus, J. E. von Steinle (born Vienna, 2 June 1810, died Frankfurt, 18 Sept. 1886); Joseph Führich (Rantzau, 9 Feb. 1800 — Vienna, 13 March 1876), and, more important in the same German environment, Ferdinand Waldmüller (Vienna, 15 Jan. 1793 — 23 Aug. 1865) and Moritz von Schwind (Vienna, 21 Jan. 1804 — Munich, 8 Feb. 1871) — all of whom Germany claimed as her own. Hans Makart (Salzbourg, 29 May 1840 — Vienna, 3 Oct. 1884) studied under Piloty in Munich. Michel Lieb, called Munkacsy (born at Munkacs, 10 Oct. 1844; died at Endenich, 1900), whose 'Christ before Pilate' and 'Blind Milton dictating Paradise Lost to his Daughters' are so well known in America, was only by residence for a short time after 1865 connected with the Viennese school. We mention also Hynais, born at Vienna in 1854; Gustav Klimt, first president of the Viennese «secession,» Karl Moll and Bernatzik.

Sculpture owed more than any other art to Francis Joseph, although that ruler understood art in general and the value of its cultivation to a nation, and for that reason «encouraged it in every way, with his voice, his presence and his purse.» Distinguished sculptors were: Franz Zauner (1746–1822), director of the Viennese Academy and author of the neo-classic equestrian statue of Joseph II; I. M. Fischer, successor to Zauner at the academy; Leopold Kisling (1770–1827); J. Klieber (1773–1850); J. N. Schaller (1777–1842); Hans Gasser (1817–68), and V. Pilz (1816–96). The new school of sculpture includes Canciani, Luksch, Franz Metzner, Adolf Böhm and Schimkowitz. The last named worked under a Viennese sculptor in New York, the late Karl Bitter.

Music.— Music has held a place of honor even from the time of Archduke Albert I, in the first years of the 13th century. Early in the 17th century the court interested itself in musical productions. Archduke Ferdinand III, who wrote the first German opera, brought the Italian opera, then recently discovered, to Vienna, and his son, Leopold I, was an accomplished musician and a patron of music-masters. Charles VI founded a musical academy at Vienna. With Maria Theresa's reign there began a series of resident composers and musicians, Gluck being the first of that illustrious line. He lived in the Wiedner Hauptstrasse. Next came Haydn, who, though not born in Vienna, as a boy was chorister in Saint Stephen's and who died at his home in the Viennese street now called Haydngasse. Mozart lived in Vienna; the city's fame brought Beethoven from Bonn and in Vienna fame came to him. Schubert was born in Vienna in 1797 and died there in 1828. Czerny was a Viennese; Joseph Launer, creator of the city's folk-music, and Johann Strauss the first, creator of the waltz, were inseparable friends in Vienna; the sons of Strauss, Johann the second and Edward, duplicated in the same field their

VIENNA



1 The Opera House

2 The Bourse

father's successes, and another true Viennese was Otto Nicolai, composer of the 'Merry Wives.' Brahms lived for 34 years in Vienna and there Schumann wrote much of his best music.

Education and Charities.— The university has a staff of more than 450 professors and lecturers, and, in normal years, about 6,400 students and 1,200 occasional hearers. The Imperial Library contains 1,000,000 volumes, including 8,000 incunabula; 33,000 manuscripts; 350,000 engravings; 50,000 pieces of music and 30,000 autographs. One of the greatest of all art galleries is the Vienna Art History Museum. Other important institutions are: Academy of Science, Natural History Museum, Austrian Museum of Art and Industry (on the plan of the South Kensington Museum), Academy of Fine Arts, Conservatory of Music and Oriental Academy. Secondary education is furnished mainly by the Gymnasia and Realschulen. There are also governmental technical high schools. Statistics of the latter for the winter semester of 1915–16, as compared with the winter semester of 1913–14, show 183 teachers and (in 1913–14) 3,177 students, but only 639 students in 1915–16. For the Vienna Agricultural High School we find 86 teachers and (in 1913–14) 1,135 students, but only 186 students in 1915–16. This shows the enormous decline caused by the war. The most famous of the city's charity institutions are the hospitals: the great general hospital; the epidemics and clinical hospitals; the Rudolph, the Jewish, the Brothers of Mercy, Children's and Convent hospitals; and those of Princess Stephanie, Emperor Francis Joseph and Empress Elizabeth.

Consult Bénédite, L., 'La Peinture au XIX ième Siècle' (Paris, n.d.), and Levitus, A. S., 'Imperial Vienna' (London and New York 1905).

MARRION WILCOX.

VIENNA, Concordat of, also known as the **CONCORDAT OF ASCHAFFENBURG,** between Pope Nicholas V and the imperial estates of Germany, in February 1448, by which that eminent pontiff agreed to certain changes in the relations between the papacy and the empire in the spirit of the Concordat of Constance, made in 1418 by Pope Martin V with the representatives of Germany, France, England and other countries.

VIENNA, Congress of, a congress of powers assembled after the first overthrow of Napoleon to reorganize the political system of Europe, disturbed by the conquests of France. The congress assembled on 1 Nov. 1814. The principal powers represented in it were Austria, Russia, Prussia, England and France. Spain, Portugal, Sweden and other minor powers were also consulted on matters more nearly concerning them. The emperors of Austria and Russia, the king of Prussia and many other German princes were present in person. The leading territorial adjustments effected by the congress were the following: Austria recovered Lombardy and Venetia, while Tuscany and Modena were conferred on collateral branches of the imperial house. The Infanta Maria Louisa, queen of Etruria, received the duchy of Lucca in exchange for Parma, Piacenza and Guastalla, which were given with the title of empress to Maria Louisa, ex-empress of France. The legations, Benevento and Ponte Corvo, were restored to the Pope. The king of Sardinia recovered Piedmont and Savoy, with the addition of Genoa. Murat retained Naples. Holland and Belgium were erected into a kingdom for the Prince of Orange, William I. Hanover, with the title of king, returned to the king of England, and the Ionian Isles were as a republic placed under the protectorate of Great Britain, which also retained Malta, Heligoland and several conquered colonies. A federative constitution, with a diet at Frankfort, was established for Germany. The kings of Denmark and the Netherlands were admitted in virtue of their German possessions to the diet. Bavaria was reinstated in her Palatine possessions with Würzburg, Aschaffenburg and Rhenish Bavaria, in return for her restorations to Austria. The demands of Prussia caused a dispute which nearly broke up the congress, but she was finally satisfied with the duchy of Posen, the Rhine Province and a part of Saxony. The congress was suddenly broken up by the restoration of Napoleon; but its acts were signed by the powers interested on 9 June 1815.

The Congress of Vienna showed a disposition also to interfere in American affairs, and an attempt was made to introduce monarchy in the South American countries then engaged in liberating themselves from the Spanish yoke, by the establishment of a French prince as sovereign over the Argentine provinces. The people of Argentina rejected the proposition. These and other meditated European aggressions, encouraged by the hostile attitude toward republican institutions of most of the powers represented at Vienna, led to the declaration of principle known as the Monroe Doctrine, which for a time put a quietus on monarchical plots against American republics. Consult Hazen, 'Europe Since 1815' (New York 1910).

VIENNA, Treaties of, various compacts arranged by representatives of European nations, at this capital, selected for its central position, and for the prominent part which Austria had always taken in the wars of modern Europe prior to her defeat in 1918. The first treaty of Vienna (30 April 1725) was a mutual guarantee of dominions by Emperor Charles VI and Philip V of Spain; besides which, the former agreed to aid in the recovery of Gibraltar from Britain and to aid the Pretender in supplanting George I of England, in consideration of Philip guaranteeing the Pragmatic Sanction. The second treaty (16 March 1731) was a joint guarantee of the Pragmatic Sanction by George II of Britain and the states of Holland. The third treaty (18 Nov. 1738) was a similar guarantee by Louis XV of France. In consideration of the revision of Lorraine and Bar (to be given meantime to Stanislas, ex-king of Poland), as well as a settlement of the Polish succession dispute, and a rearrangement of the possessions of Austria, Spain and Sardinia, in Italy. The fourth treaty (14 Oct. 1809) was between France and Austria, after the battle of Wagram and the armistice of Znaim, by which Austria agreed to resign some districts on the western border of the archduchy to Bavaria; Goritz, Friuli, Trieste, Carniola and parts of Crotia, Corinthia and Dalmatia to France,

these provinces to be formed into the government-general of Illyria; some districts of Upper Lusatia to the king of Saxony; western Galicia, with Cracow and Zamocz, and a share in the salt mines of Wielicza, to the grand-duchy of Warsaw; and the east corner of Galicia to Russia, a total loss to Austria of 58,170 square miles, with population of 3,500,000 and all her seaports.

The next and far the most important meeting of the representatives of European nations was the Congress of Vienna, after the first treaty of Paris, for the general settlement of the affairs of Europe. The congress, assembling 30 Sept. 1814, was composed of Tsar Alexander I of Russia, with Count Nesselrode; the king of Prussia, with Hardenberg; Lord Castlereagh, and afterward the Duke of Wellington, representatives of Britain; Prince Metternich for Austria; Count Talleyrand for France; as well as representatives of Spain, Portugal, Sweden, Rome, Germany and all the other minor powers who were interested personally in the deliberations — the total number convened being about 500. But the representatives of the minor states, who had expected a species of European parliament, to which all would be admitted, were sadly disappointed by the preliminary resolution of the great powers to constitute two committees, one of which would deliberate on the affairs of Germany; and the other, composed of the representatives only of Austria, Prussia, Russia and Britain, would discuss the affairs of Europe generally, and decide respecting partition of the conquered districts (formerly belonging to France and her allies), and the frontier of each European sovereignty. To this latter council Talleyrand, by the influence of Castlereagh, who early saw the necessity of a counterpoise to the influence of Russia and her follower, Prussia, in the conferences, was admitted (5 October); and three days afterward it was increased by the representatives of Spain, Sweden and Portugal. The first resolution of the European committee, to rearrange Europe so as to leave the parties directly interested nothing more to do than give their adhesion to the arrangements made for them — an arrogation of sovereignty over all Europe — was loudly exclaimed against; but the congress was one of rulers and their representatives, and not of the nations and their representatives; so the indignant clamor on all sides was unheeded. The points at once and unanimously settled were: the constitution of Belgium and Holland into one kingdom (the kingdom of the Netherlands); the annexation of Norway to Sweden; the restoration of Hanover, with a large slice of Westphalia, to the king of Great Britain; of Lombardy to Austria; and of Savoy to Piedmont. But the questions as to the disposal of Poland, Saxony and Genoa were not so easily settled. Russia and Prussia, vain of their prominent share in crushing Napoleon, were bent on extravagant aggrandizement — Russia insisting on obtaining the whole of the grand duchy of Warsaw (see POLAND), while nothing less than the whole of Saxony and some of the trans-Rhenish provinces of Westphalia would satisfy Prussia; and both significantly hinted at the proximity of their colossal armies, with the view of awing the other powers into compliance. But Castlereagh was not amenable to such influences; and while steadily refusing to yield an iota to such preposterous pretensions, he joined with Metternich and Talleyrand in a secret treaty, offensive and defensive, 3 Feb. 1815, which was cordially acceded to by Hanover, Sardinia, Holland and Bavaria. The news of this agreement soon leaked out and produced considerable modification in the pretensions of the northern powers. At last it was agreed that Prussia should obtain a portion of Saxony, Posen, Cleves, Berg, the greater part of the left bank of the Rhine as far as the Saar and Swedish Pomerania; and cede East Friesland, Hildesheim, etc., to Hanover; Anspach and Baireuth to Bavaria; and Lauenburg to Denmark; while Poland, except Posen, Thorn and those parts of the grand duchy which had been (1809) taken from Austria, was to be erected into a kingdom separate from Russia, but under the rule of the tsar. Austria recovered the cessions which she had been forced to make (1809), obtained also the Valteline from Switzerland, and the establishment of collateral Hapsburg lines in Tuscany and Piombino; while Maria-Louisa obtained Parma. The Pope was replaced in his former position as a temporal sovereign; the ancient constitution of Switzerland re-established; and Genoa — despite the strongly expressed aversion of its inhabitants — incorporated with Sardinia. The news of Napoleon's return from Elba somewhat hurried the conclusion of these multifarious arrangements, yet the negotiations were not interrupted; Metternich's scheme for a new confederation of the German states (the same which continued till 1866) was unanimously agreed to — the question of mutual indemnities, rectifications of frontier, etc., being subsequently settled 20 July 1819 at Frankfurt, by a territorial commission of representatives of the four great powers. The questions of the slave-trade and of the free navigation of the Rhine and its tributaries were brought up by England and also satisfactorily settled. Finally a formal treaty (the fifth treaty of Vienna) was drawn up and signed 9 June 1815.

VIENNA PASTE, preparation extensively used as an encaustic, though not contained in the Pharmacopœia: it consists of a mixture of equal weights of caustic potash and freshly burned lime rubbed to powder in a warm mortar. To 50 parts of this compound 60 parts of quicklime are added, and the whole kept in a well-stoppered bottle. When required for use, the powder is made into a soft paste with a little spirit, and applied to the part to be cauterized. Vienna paste is much employed by some physicians in certain affections of the womb; and is one of the best applications to an indurated chancre.

VIENNE, vē-ĕnn', department of western France; bounded north by the departments Maine-et-Loire and Indre et Loire, west by Deux-Sèvres, which intervenes between this and the maritime department of Vendée; 2,680 square miles. The Vienne affluent of the Loire, is the principal river, all the other streams of the department being tributary to it; it flows from south to north and receives the Clain, Gartempe and Creuse — of which only the last is navigable. The surface of Vienne is flat, with a gradual slope toward the north. The country consists of fertile plains, fine pasture-lands, and

extensive forests. The climate is soft, temperate and healthful. Grain is cultivated in greater quantity than is required for local consumption. On an average, more than 21,000,000 gallons of wine are produced annually. In general, however, agriculture is in a backward state. The mineral riches consist principally of iron and manganese and numerous quarries of building and other stone, including lithographic stone finer and harder than those of Munich. There are cutlery-works and a national arms factory at Châtellerault; forges, blast-furnaces, spinning-mills (both wool and hemp), and manufactures of serges and coarse cloth, paper-works, etc. Vienne is divided into five arrondissements — Poitiers, Châtellerault, Civray, Loudun, Montmorillon. The capital is Poitiers. Pop. 332,276.

VIENNE, France, an ancient town in the department of Isère, on the Rhone, 19 miles south of Lyons. The river Gère passes through the town and here joins the Rhone, after having supplied motive power to a number of mills and factories. Vienne was the chief town of the Allobroges, is mentioned by Cæsar and by Martial, who calls it the rich Vienne; in the time of the Roman emperors it was the rival of Lyons. Besides numerous water conduits, etc., of Roman construction, there are a Corinthian temple of Augustus and Livia, remains of a theatre and an obelisk, called The Eagle, 72 feet high; and the museum containing many relics of Roman antiquity. The cathedral of Saint Maurice, partly Romanesque, partly Gothic, was built in 1107–1251; Saint Peter's dates from the 6th century. The town was prominent under the Burgundian princes, and its archbishop disputed with his neighbor of Lyons the primacy of Gaul. In 1312 a council was held here, in which Pope Clement V pronounced the suppression of the order of the Templars. There are manufactures of woolens, silk, gloves, paper, leather and iron goods, and trade in grain and wine. Pop. about 27,000.

VIENNE, Haute, France, a department of the Republic, formerly known as Haut-Limousin, bounded west by the departments of Vienne, Charente and Dordogne. It has an area of 2,130 square miles. It is watered by the Vienne and its tributaries — the chief of which is the Gartempe. The surface is mostly level, but traversed by ranges of low hills, of which the Monts du Limousin, which traverse the south of the department, rise in their highest summit to 3,000 feet. The Mont de Puy-Vieux, the highest in the department, is 3,200 feet above sea-level. The climate is cold, humid and frequently foggy. The soil is not fertile, and agriculture is in a backward condition; but domestic animals are reared in great numbers. Mines of iron, lead and copper are worked, and China-clay, of which there is an inexhaustible supply, is largely exported to Russia and America. About 6,000 men are engaged in porcelain-making. It is divided into four arrondissements — Limoges, Bellac, Rochechouart, and Saint-Yrieix; capital Limoges. Pop. 384,736.

VIEQUES, vē-ā'kas, or **CRAB ISLAND,** West Indies, a dependency of the United States, administratively, a district of the department of Humacao, Porto Rico, a fertile island with several commodious ports where the largest ships can ride at anchor. It lies six miles east of Porto Rico, about six miles from shore, is 19 miles long and four wide, has a fine climate and produces almost all varieties of fruit and vegetables that grow in the West Indies. The population of Vieques district (in which Culebra Island was included as a ward) was given as 6,642 in the census of 1899, of the town called Vieques, 2,646. The principal settlement is located on a bay on the southeast side; on the north is the town of Isabel Segunda. Latest statistics of the island prepared under the direction of the War Department of the United States show: Native whites, 2,545; foreign whites, 138; negroes, 1,036; mixed, 2,923; married, 688; single, 4,539; living together as husband and wife by mutual consent, 1,185; widowed, 230; inhabitants 10 years of age and over who attend school, 162; 10 years of age and over who could neither read nor write, 3,288; superior education, 22; inhabitants engaged in agriculture or fisheries, 1,396; trade and transportation, 225; manufacturing and mechanical industries, 253; professional service, 39; domestic and personal service, 727; without gainful occupation, 4,002; total number of dwellings, 1,273; number of farms, 120.

VIETA, vē'ā-tạ, **François,** French mathematician: b. Fontenay-le-Comte, 1540; d. Paris, February 1603. He practised law until 1589, when he was appointed maitre des requêtes under the Parliament at Paris, subsequently holding various civil offices. He was the founder of the modern algebra and the foremost algebraist of his time. His works were collected and published by Van Schooten (Leyden 1646).

VIEUXTEMPS, vē-ė-tŏñ, **Henri,** French composer and violinist: b. Verviers, Belgium, 2 Feb. 1820; d. Mustapha, Algiers, 6 June 1881. He studied at Vienna and at Paris, and made his first appearance at Paris in 1841. He visited the United States in 1844–45, 1856 and 1870, was solo violinist to the emperor of Russia in 1846–52, and in 1870 was appointed to a professorship at the Conservatoire at Brussels. A stroke of paralysis, in 1873, left his right arm useless and he was compelled to retire. He composed numerous pieces for the violin, comprising concertos, fantasies and dances.

VIGAN, vē'găn, Philippines, pueblo and capital of the province of Ilocos Sur, on Luzon Island and at the northern delta of the Abra River, about three miles from the coast, and 200 miles northwest of Manila. It is open to the coast trade, is on the west coast road connecting it with Dagupan, and the Dagupan and Manila Railroad, and carries on an important trade with the interior of the province by means of the river. It contains brick kilns, a boat-building yard and a carriage factory. It has broad streets and a number of important public buildings, including the casa real, courthouse, provincial administration building and the council seminary; it has been an episcopal see since 1755 and contains a fine cathedral and the bishop's palace. Pop. about 18,000.

VIGEVANO, Italy, town situated in the province of Pavia; 15 miles southeast of Novara and 24 miles southwest of Milan. It stands on rising ground on the banks of the Mora, not far from the Ticino. It is a walled town; has an arcaded market-place, a cathedral,

and a castle of the Sforza family, dating from the 14th century; manufactures silk, linen and cotton fabrics; and has active trade in grain and wine. Pop. 15,000.

VIGFUSSON, vĭg'foos-sŏn, **Gudbrand,** Scandinavian scholar: b. Frakkanes, Iceland, 13 March 1827; d. Oxford, England, 31 Jan. 1889. He was educated at Copenhagen University and lived in Copenhagen from 1849 till 1864, devoting himself to the study of old Icelandic literature. His first work, 'Timatal,' on the chronology of the Sagas, was published in 1855. In 1858 he brought out the 'Biskupa Sögur, or Lives of the Icelandic Bishops,' and in 1864 the 'Eyrbyggja Saga.' He then went to England to undertake the Icelandic-English lexicon, on which he was employed from 1864 to 1871. In 1878 the Clarendon Press published his 'Sturlunga Saga,' to which he prefixed the 'Prolegomena,' containing a complete history of the classic literature of Iceland. This was followed by the 'Corpus Poeticum Boreale' (with F. York Powell), a complete collection of the ancient Icelandic poetry, with translation. In 1848 he was appointed lecturer in Icelandic and kindred subjects at the University of Oxford.

VIGIL, the day and night preceding a festival in the Roman Catholic Church. In the early period of the Church the night as well as the day was spent in prayer and fasting, but this practice, so far as the night was concerned, was found to promote immorality, and it was given up, the vigil being celebrated in the day time only, except the midnight mass, before Christmas, which is a relic of the old custom. The term "vigil" is also applied to the devotional exercises held on the evening preceding a festival.

VIGILANCE COMMITTEE, a term used in the United States to denote a band of citizens organized to summarily punish crime or prevent the commission of crime, in instances where the civil and lawfully constituted authorities seem powerless to enforce the law. The most noted committees in the history of the country were those formed in San Francisco and contiguous territory in the Western States, and in New Orleans, in the Southern States. In the earlier years of San Francisco the city was so overrun with the lawless element among the miners and adventurers that the administration of justice in the hands of the constituted authorities was a travesty. It was then that the work of the vigilance committee, or Vigilantes, as they were styled, began. That work was short, sharp and terrible. Thieves and murderers were hanged on every side, while others were forced to seek safety in flight. In New Orleans the last instance of the organization of a vigilance committee was in 1891, when a body of citizens took from the city jail a number of Italians, suspected of being members of the Italian fraternity of murderers known as the Mafia, and accused of being the murderers of Chief of Police David Hennessey, and put them to death by shooting and hanging. This action produced serious complications between the Italian government and that of the United States.

VIGILIUS, vĭ-jĭl-ĭ-ŭs, Pope: b. Rome; d. Syracuse, 555. During the pontificates of Agapetus I and Sylverius, Vigilius was *apocrisiarius* (an office nearly corresponding to the later one of papal nuncio) at Constantinople, and having sided with the imperial government against Pope Sylverius, was sent to Rome to procure the imprisonment and exile of Sylverius. This being accomplished, Vigilius was proclaimed Pope in 537, but was not acknowledged by the entire Church as such till 540, when Sylverius died. It has been said that, according to a promise given to the empress of Constantinople, he wrote in 538 a secret letter to the heads of the Monophysites, in which he approved of their views and condemned the anti-Monophysite decisions of Pope Leo I. Modern critics all agree in pronouncing this letter apocryphal; and later (after 540) he refused to issue a decree in favor of the Monophysites, declaring that he would abide by the decisions of the four œcumenical councils and the decrees of popes Agapetus and Leo. When Justinian in 544 condemned the so-called "Three Chapters" (the writings of Theodore of Mopsuestia, of Theodoret against Cyril, and the Epistle of Ibas), and the western bishops generally threatened resistance to this, Vigilius was summoned to Constantinople (546) and prevailed upon to condemn likewise the "Three Chapters," in a document called 'Judicatum' (548); saving, however, the authority of the council of Chalcedon, which has refrained from condemning them. As this satisfied neither the opponents nor friends of the "Three Chapters," Vigilius called an œcumenical council, the fifth, to settle the dispute. In the eighth session, the "Three Chapters" were condemned in nearly the same terms used by Pope Vigilius in his 'Judicatum.' As a matter of prudence to allow the agitation occasioned by the controversy to subside, the Pope waited some months before announcing to the Catholic world that the "Three Chapters" had been regularly condemned by the council. Vigilius then obtained the emperor's leave to return to Italy, but died at Syracuse on the way back.

VIGNAUD, vēn-yō', **Jean Henry,** American diplomatist and author: b. New Orleans, La., 27 Nov. 1830. He taught in the schools of his native city in 1852–56, and at the same time wrote for *Le Courrier* and other papers. In 1857–60 he was editor of *L'Union de Lafourche* at Thibodeaux, La., and in 1860–61 was one of the founders and the editor of *La Renaissance Louisianaise,* a weekly journal. In 1861 he joined the Confederate army as captain in a Louisiana regiment and was captured at New Orleans in 1862. The next year he was appointed secretary of the Confederate Diplomatic Commission at Paris; in 1872 he was translator at the Alabama Claims Commission at Geneva; and in 1873 a delegate from the United States to the International Metric Conference. He was appointed second secretary of the American legation at Paris in 1875, and first secretary in 1882, retaining this position when the legation became an embassy. He has written 'L'Anthropologie' (1861); 'Critical and Bibliographical Notices of All Voyages which Preceded and Prepared the Discovery of the Route to India by Diaz, and to America by Columbus'; 'Toscanelli and Columbus — the Letter and Chart of Toscanelli on the Route to the Indies by way of the West' (1902); 'Toscanelli and Columbus — Letters to Sir Clements R. Markham and C. Raymond Beazley' (1903). The publication of his 'Toscanelli

and Columbus' provoked considerable controversy; its aim was to impugn the purely scientific origin of Columbus' discovery. In Paris he continued to write, bringing out several books in French, his last contribution to the Columbus controversy being 'Histoire Critique de la Grande Enterprise de Christophe Columb' (Paris 1911).

VIGNETTE, (French vignette, a flourish, a head-piece — from *vigne,* a vine — from L. *vinéa,* a vine — *lit.,* a little vine, the first vignettes having been adorned with borders of vine-leaves and grapes): in *Gothic architecture,* a running ornament or embellishment of vine-leaves, tendrils, etc.; in *books,* the small engraved embellishment, illustration, or decoration that precedes the title-page or chapters of a book, etc., originally bordered with a scroll of trailing plants or the like, hence the name; in general a picture, and specially a photographic portrait, displaying the head and upper part of the body only, and having no definite border, the ground shading off insensibly to an even color.

VIGNOLA, vēn-yō'lä (GIACOMO BAROZZI), Italian architect: b. Vignola, near Modena, 1 Oct. 1507; d. Rome, 7 July 1573. He received his art training at Rome, later spent two years at the French court; was architect to the Pope and after the death of Michelangelo (1564) architect of Saint Peter's. The two small cupolas are his additions to that building and the principal other works which he produced are Caprarola Palace near Viterbo and the Church of Jesus at Rome, which was completed after his death by Giacomo della Porta, but not in accordance with the original plans. His buildings are marked by taste and harmony, although chilling in their severity of design. He has had more influence as an architect through his work, 'Rules of the Five Orders of Architecture' (1563), which for a long time was considered the standard authority, although on his theory the antique builder was restricted by narrower rules than ever actually were in vogue.

VIGNY, vēn-yē, **Alfred Victor,** COMTE **de,** French author: b. Loches, Indre et Loire, 27 March 1797; d. Paris, 17 Sept. 1863. He entered the army at the Restoration, but resigned from the service in 1827. By this time he had published two books of verse 'Poèmes' (1822) and 'Poèmes Antiques et Modernes' (1826), the latter containing the 'Moïse'; and 'Cinq-Mars' (1826), a work of fiction which, despite the author's study of sources, is far from being true to history. This work owes much to Walter Scott. De Vigny made good translations of 'Othello' and the 'Merchant of Venice,' and won a great triumph in 1835 with his drama of 'Chatterton.' At the highest point of his reputation, he did not, however, follow up his success; and he printed nothing further but a few poems in the 'Revue des Deux Mondes.' He was elected to the Academy in 1845. Many critics regard his 'Servitude et Grandeur Militaires' (1835) as his finest work. It is a collection of short stories of the army, and was based to some extent on his own experience. Its tribute to martial heroism was highly appreciated soon after the Napoleonic time. His dramas and prose fiction, particularly 'Cinq-Mars,' are much better known than his verse, though it is chiefly by the latter that literary historians have appraised him. "He is," says Dowden, "the thinker among the poets of his time" in France. His few informing philosophical ideas he treated with great, though unequal skill. His general attitude was one of a rather stoic acceptance of things, and his manner has a corresponding dignity. (See CINQ-MARS). Other volumes by him are 'Les Destinées' (1864), and 'Stello' (1832), the former verse, the latter prose. Consult Paléologue, 'Alfred de Vigny' ('Grand Ecrivains Français,' 1891); Dorison, 'Alfred de Vigny, Poète et Philosophe' (1892); Montégut, 'Nos Morts Contemporains,' 1st series (1882); Sainte-Beuve, 'Portraits Littéraires,' Vol. VIII, 'Portraits Contemporains,' Vol. II, and 'Nouveaux Lundis,' Vol. VI. Consult his 'Life' by L. Seche (Paris 1910).

VIGO, vē'gō, Spain, town in the province of Pontevedra, situated on the Bay of Vigo, 20 miles southwest of Pontevedra. It is the headquarters of sardine and tunny fisheries. The town is old and irreguarly built, but picturesque, and the surrounding country, which is very attractive, is rich in wine, oil and fruits. A government wireless station is located here. The population has doubled in 20 years, the 1918 estimate being 47,000.

VIHARA, vī-hä'ra, a word originally meaning in Sanskrit pleasure or relaxation; afterward signifying a pleasure-ground, and hence a meeting-place. The temples being meeting-places for the Buddhist monks — just as places of worship in New England are called meeting-houses — the word was used to designate a Buddhist temple, and hence it came to be applied to a Buddhist monastery, which in complete form includes the image-house, with images of Buddha, the dagoba, a bell-shaped dome, solid in structure, under which a relic of Buddha is supposed to be buried, the sacred Bo-tree, surrounded by a stone terrace, and supposed to be a descendant of the Bo-tree, or sacred fig-tree, under which enlightenment came to Buddha; also a hall for preaching, a hall of assembly, and sleeping-rooms. See BUDDHA; INDIA; PAGODA.

VIJAYANAGARA, vē-jä-yän'a-ga'ra, or **BIJANAGUR,** bē-ja-nä-goor', otherwise HAMPI, India, an ancient city, now in ruins, in Bellary district, Madras, 30 miles northwest of Bellary. It stands in a plain, surrounded by enormous masses of granite, and covers an area of nine square miles. On the north and west it is washed by the Tungabhadra, and in other directions is enclosed partly by natural precipices and partly by strong stone walls. Among its edifices are a magnificent temple of Vishnu with a pyramidal portico about 160 feet high, divided into 10 stories; another temple, also entered through a painted pyramidal portico; and one of Rama, with pillars of black hornblende covered over with elaborate mythological sculptures. These buildings, and many others beside are in the purest style of Hindu architecture and are carefully conserved by government. The ruins of the ancient city, founded in 1386, and for 250 years the stronghold of a great Hindu empire, was effected by a confederation of Mohammedan rajahs, who took and sacked it in 1564. The site is still

esteemed holy by the Hindus, and is the location of an annual festival. Consult Sewell, R., 'A Forgotten Empire' (1900).

VIKING, from the Icelandic *vik,* a bay or fiord, and the termination *ing,* implying one who belongs to or is descended from: literally one who lurked in bays and issued thence to plunder, a rover belonging to one of the bands of Northmen who scoured European seas during the 8th, 9th and 10th centuries. The wrong syllabic division of this word as vi-king instead of vik-ing has caused it to be frequently confounded with *sea-king,* a term which is applied to a man of royal race, who took by right the title of king when he assumed the command of men, although only of a ship's crew; whereas the former term is applicable to any member of the bands. The Scandinavian vikings were excellent ship-builders and expert seamen, and were able to navigate in the open sea by the aid of the sun, moon and stars. Notwithstanding the origin of the term, which is unpleasantly suggestive of the methods of Malay pirates of present or recent date, it has come to be the recognized designation of the Scandinavian adventurers who, by daring, hardihood and endurance, fought their way to thrones, and established kingdoms, principalities and dukedoms in all parts of Europe, from southern Russia to Britain. See NORMANS.

VILAINE, vē-lān, France, a western river which rises in the department of Mayenne, flows west past Vitré to Rennes, where it receives the Ille from the north, and with a southwesterly course reaches the Atlantic at Pénestin, in the department of Morbihan, after a course of 150 miles, 80 of which are navigable. With the Ille it gives its name to the department of Ille-et-Vilaine.

VILAS, vī'las, **William Freeman,** American lawyer and politician: b. Chelsea, Vt., 9 July 1840; d. Madison, Wis., 27 Aug. 1908. He went to Wisconsin with his parents in 1851, and was graduated from the University of Wisconsin in 1858, and from the Albany Law School in 1860. He was admitted to the New York bar, but returned to Wisconsin, was admitted to the bar there, and had just begun the practice of his profession, when he joined the Federal army (1862). He was promoted lieutenant-colonel, and commanded his regiment during the siege of Vicksburg; he resigned from the army in 1863 and returned to his law practice. He was professor in the Law School of the University of Wisconsin, 1868–85; and was a regent of the University, 1881–85 and 1897–1905. After the Civil War he was an active member of the Democratic party; from 1876 to 1886 he was the Wisconsin member of the Democratic National Committee, and in 1884 was permanent chairman of the National Convention; and in 1885 was elected to the Wisconsin legislature. In the same year he was appointed Postmaster-General of the United States, and in 1888–89 was Secretary of the Interior. His course as Postmaster-General was marked by an improvement of the foreign mail service, economy of management and the negotiation of postal treaties with Mexico and Canada. In 1891 he was elected to the United States Senate for a six years' term. In 1896, being opposed to the free-silver movement, he was one of the organizers of the National or Gold Standard Democratic party, attended their convention at Indianapolis, and was chairman of the committee on resolutions. He edited (with E. E. Bryant) the 1st, 2d, 4th and 6th–20th volumes of the 'Wisconsin Supreme Court Reports.'

VILAYET, vīl-a-yĕt', in the Turkish empire, the most important administrative division, governed by a vali, or governor-general and a council. Each vilayet is divided into *livas* or *sanjaks.*

VILKOMIR, or **WILKOMIERZ,** town situated in Lithuania, government of Kovno; on the Swenka, 130 miles southeast of Riga. It was a flourishing town in the 13th century, and continued prosperous till the 17th century, when it began to decline, in consequence of the wars with Sweden, Russia (Vilkomir being at that time a Polish town), and the Cossacks. Vilkomir contains an ancient church of the 13th century. Flax is exported to Riga. Pop. 15,000, of whom over 50 per cent are Jews.

VILLA, vĭl'a, a word which in the English and Anglo-American sense means a rural, suburban, or sea-coast dwelling of some size and style, as distinguished from a farm-house and which is occupied usually in the summer months by a person who has also a residence in the town or city. In the Latin it had a similar meaning but also meant originally a small collection of houses, and as the country home of a rich Roman would be likely to have around it a cluster of dwellings of retainers and slaves, it is probable that the country house became known as a villa from this fact. The French and Spaniards have enlarged on the Latin meaning, and with them it is equivalent to the English word "town," either as designating an urban community, or as distinguishing town from country. Italians give about the same meaning to the word as their Roman predecessors.

VILLA ADRIANA, vĕl'lä ä-drē-ä'nä, or **HADRIAN'S VILLA,** the ruins of a splendid palace, temples, baths, theatres and other buildings erected by the Emperor Hadrian, near Tibur, now Tivoli, about 15 miles east-northeast of Rome. The emperor spared no expense to make it the most beautiful palace in Italy. Our modern knowledge of architecture is largely based on the designs and forms found in Hadrian's Villa. Many of the statues now in Roman museums were found there.

VILLA ALBANI, äl-bä'nē, a modern Roman villa containing many works of art. It was founded in 1760 by Cardinal Alessandro Albani. The first Napoleon caused many of its art treasures to be removed to Paris. These were restored to the Albani family in 1815, and were sold, and are now in the Glyptothek at Munich, and other collections. Prince Torlonia bought the villa in 1866.

VILLA ALDOBRANDINI, äl-dō-brändē'nē, a noted villa at Frascati, near Rome, built for Cardinal Aldobrandini about the close of the 16th century, and afterward owned by the Borghese family.

VILLA BORGHESE, bŏr-gā'sĕ, a villa, just outside the Porta del Popolo, Rome. The founder was Cardinal Scipio Borghese, nephew

of Pope Pius V. The original museum was purchased by Napoleon I and sent to the Louvre, and another has been established in its place. The villa contains many fine sculptures.

VILLA LUDOVISI, loo-dō-vē'sē, formerly one of the chief attractions of Rome until the palace and gallery of statues, and a large part of the grounds, gave way to the march of local improvement. The villa was built in the early part of the 17th century by Cardinal Ludovisi on the site of the Gardens of Sallust, and large sums were expended in beautifying the grounds and adorning the gallery of statues with a collection of antique sculptures, including the famous Ludovisi Juno and Mars. These were removed in 1891 to the Piombino palace, and the only building remaining of the Villa Ludovisi is the Casino dell' Aurora.

VILLA MEDICI, mā'dē-chē, a famous Roman villa, south of the Pincio, with a fine collection of casts. It was built in 1540 for Cardinal Ricci de Montepulciano, became the property of the Medici family about 1600, and passed into the possession of the Grand Dukes of Tuscany, the younger branch of that family. Here Galileo was confined, when his sentence to imprisonment in a dungeon for advocating great astronomical truths was commuted to detention in the villa of the Grand Duke of Tuscany at Rome. In 1801 it became the home of the French Academy of Art, founded by Louis XIV. It is one of the most interesting features of the Eternal City.

VILLA NAZIONALE. See NAPLES.

VILLA PALLAVICINI, päl-lä-vē-chē'nē, the celebrated residence of the Marchese Durazzo, at Pegli, on the Gulf of Genoa, Italy. Nature and art are combined to make it one of the most picturesque and enchanting spots on the globe. The decorations display taste and magnificence, and the gardens are luxuriant with the choicest plants of that genial climate, while statues, grottoes, fountains, a Christian chapel, a mosque, a Roman temple, a triumphal arch with sculptures, and other works of art add to the grandeur and beauty of the scene. The villa commands an extensive view of the Mediterranean.

VILLAFRANCA DI VERONA, vēl-lä-frăng'kä dē vä-rō'nä, Italy, a small town in the province of Verona, 10 miles south-southwest of Verona. It is of mediæval appearance, surrounded by walls and moats. The castle is now in ruins. The preliminaries of a peace between Francis Joseph of Austria and Napoleon III of France were signed here on 11 July 1859. Pop. about 12,500.

VILLAGE, The. The term village is popularly applied in the United States to any small community with less than 500 population. It is thus popularly and loosely distinguished from the town (not to be confused with the New England town) and the city. In a few of the older eastern States (Pennsylvania, Connecticut, New Jersey, Virginia) the designation "borough" is used for one or more of these classes of small municipalities.

The incorporation laws of more than half the States do not provide for incorporated villages, but only for towns and cities. In general the older States are the more conservative in this matter, New England incorporating only a very few of the many villages communities within her towns. Kansas knows only one class — the "city." This legal practice seems to be the evidence of the urban ambitions of small communities in this rapidly growing nation.

These incorporation laws, moreover, are very liberal in allowing communities, almost without restriction even as to number of people, to incorporate either as villages, towns or cities. In some cases a minimum population is required, but there is usually no limitation on the form of incorporation adopted, although such are beginning to appear in some States. Consequently there are many extremely small incorporated municipalities of the village type, and even of the town and city classes. This again is indicative of an ambition for public improvements and services which only grants of power to the higher grades of municipality can effect.

There were no such small municipalities in the Colonial period, and reluctance even to incorporate communities which had every possibilty of becoming places of importance. There were less than a score of incorporations down to the time of the Revolution, but at that time and immediately after much greater liberality was shown, and the number of municipalities grew rapidly. But the villages and towns had still no local self-government, although special laws were frequently passed allowing powers as local improvement districts, for fire protection, drains and the like. Out of these and probably first in New York State came the practice of incorporating villages. Later general laws were enacted, but it is only within very recent years that a system of village law is beginning to take form.

Consequently, this country presents to-day the unique and characteristic phenomena of some 12,000 incorporated places under 2,500, largely towns and cities. Since the United States census considers only communities of more than 2,500 population as urban, these may be said to constitute the village proper. More than half of these are of less than 500 population. Nor does this include the many hundreds of unincorporated villages and towns in New England where practically every town has one and usually several. Their total population is more than 8,000,000.

To these incorporated places should be added the many thousands of hamlets, or as they are popularly called, villages, found in all parts of the United States. The best commercial atlases designate 75,000 "places" of stated population (50 up). These are pretty villages, often inland from railroads. They are more frequently found, and are less populous, in general in the older eastern and southern States. Conservatism as to incorporation is here greater than in newer sections, hence a considerable number of them are of quite large population (100 up). There are on the average, therefore, several of these for every incorporated place. Their total population is probably more than 5,000,000.

Thus this village sphere of community life includes about one in eight of the American people. It is neither urban nor rural in its characteristics. It is distinctly intermediate. In

the past the village has turned toward the town and city, but now more and more is related to the rural. Neither urban nor rural can be rightly judged until this large intermediate village sphere is separated from them. Many characteristics attributed to rural life are due to the inclusion in the rural of this class of communities, and the same is true of our judgment of the urban sphere. Villages should not be included with the population of the open country, nor with the town and city proper. Indeed, many communities of several thousand population are often essentially country towns, whose population is recruited from the farming population, and whose business and social interests are bound up with the surrounding farm district.

The tendency to incorporate village communities has been especially marked since 1890. More than half of all at present existing have been incorporated since that date. Three of the New England States (Maine, Vermont, New Hampshire) even have allowed incorporation, though it has only in a few score instances been availed of as yet. In the north and middle Atlantic States there is a conservatism in practice and only the larger places (over 500) are generally incorporated. In the South this has been even more marked, often not more than one place in a county being incorporated and in many cases none such is found. But since 1890 and especially since 1900 many small places, particularly those on the railroads, have incorporated. In the North Central group of States incorporation of villages is most in vogue; already more than half of the total number of such are in this section, although only only-fourth of the nation is resident there.

Here, too, segregation of the incorporated village from its township has been adopted in several States. And special representation on county boards (supervisor type) has in a few cases been accorded to villages. But this represents an extreme tendency; generally the village remains part of the township for township purposes, while almost everywhere the school district is separate and independent of the village corporation, and is usually more extensive in area.

Such political independence of the American village is characteristic and unique. The European "commune" includes both village and farm district in one political unit. Nine-tenths of the people of Russia live in such village communities or "*mirs*" and communal life is only less widespread in other European countries. There is practically no open country life or isolated as in this country. Moreover, the villages are more than merely business centres for the district, as they are with us. There the farming or peasant population live in the village centres and cultivate the surrounding plots. Thus there is no motive for political separation.

In America the village has always had town and city ambitions. In the early days the great majority of the places realized those ambitions though some, missed by the railroad and by industry, stood still or suffered decline. The later ones have little opportunity of becoming cities, and see their permanent future in relations with their countryside. This is the underlying reason for the less widespread desire to incorporate villages to-day than formerly. Incorporation was usually the outcome of an ambition to become a town or city. This divorced them politically from the farming community.

The early village was nothing more than a trading and later a shipping point. Latterly, since the 80's, it has more and more become a place of residence for retiring farmers and others for whom there was no place in the active life of the farm. This together with the investment in village business institutions on the part of surrounding farmers, tends to bind village and countryside together in interest. Retiring farmers, too, increasingly rent rather than sell their farms on retiring. In the first days of the rise of land values they usually sold. Increasingly, too, they rent to relatives, which gives them continued concern not only with the business but social interests of the country. The village schools and churches, too, draw many farmers and their families. It has become a custom to speak of village churches as country churches. School law recognizes the facts and tendencies of farmers' use of village schools. The village has become more broadly a business and social centre for its district. The farmers are about as much concerned with village affairs and improvements as the villagers themselves. The conditions and needs of the new agriculture give the farmer a new concern in village business and social institutions. Problems of marketing, credit and labor all interest him in the village. The village is now, as it was not formerly, a shipping, a trade centre.

It is probable that as in a few States of the East, following the New England custom, added powers may be given the township to enable it to answer the needs of village improvements. Already many towns and villages are being made coterminous with reduced townships. Many villages have very extensive corporate limits and in some States some township powers, such as tax assessments, are being added to those of the village. In the future we may approximate somewhat to the conditions of the European commune.

The villages are, unlike the towns and cities, by no means uniformly growing in population. Stationary or losing numbers is exceptional among larger places, although now increasingly frequent. In the villages it is the rule. More than half are not growing in numbers. Perhaps one in four is losing rapidly.

This is in part the result of rural depopulation, and itself a large factor in such. Of recent years the villages have lost in many cases more than their farm districts. The larger towns and nearby cities have drawn trade and residents. Village youth have sought opportunity elsewhere in the newer farming regions or more so in the cities. Moreover, an abnormally large proportion of villagers are aged (above 45 years), the youths remaining in active farming or seeking the cities. But conditions are changing so as to favor village growth and prosperity. Retiring farmers now more often seek their neighborhood centre than formerly, and the growth of village business, social activity and demands for farm labor furnish new opportunities. At present the collective village population is growing only

slightly per decade (less than 10 per cent) but conditions are favorable for a very rapid and large increase as new and cheap lands become unavailable, and more diversified agriculture spreads.

It is the exceptional village that will in future become a town. Seldom will manufactures enter to contribute to their growth. They must depend upon utilizing their opportunities as business and social centres for their farm districts.

Already the graded village school, with centralization of pupils, is more important in the reorganization of rural schools than is the more noteworthy, but exceptional, movement to consolidation. The village is the natural school centre for most farming communities. And so of the rural church. Already two-thirds of the so-called country churches are in the villages. Strictly rural churches decline and decay. The village churches find their best opportunity in serving the farming population.

The average American village, however, presents a duplication, rivalry and waste in its institutional life that is characteristic. Several churches, a large array of business places, fiercely competing for the limited opportunity are typical. There is also a keen rivalry between neighboring places. Village life to-day is strenuous. The village that succeeds will be the one that realizes its place and function in local life.

The form and powers of local self-government generally accorded the village is that of municipalities in general. Incorporation is by popular vote of the district and formal petition to county authorities. A chief executive officer, variously known as mayor, president, etc.; a limited number of administrative officers, such as treasurer, assessor, clerk, marshal; and a council are the constituent agencies. These are almost always elected by direct popular vote. Elections take place in general every two years, and usually in the spring. The mayor usually appoints the marshal, and in general is held responsible for police administration. Most States allow the village community to select its own justices of the peace, and often the mayor is a justice ex-officio. Usually he has a casting vote, but no veto. The council is a small body naturally, of three or five members, selected at large, and holding monthly meetings. The officers throughout are unpaid, paid nominally or for specific services. The school board is a separate body, also popularly elected.

The powers accorded the village are limited taxing and financial power, restricted by the necessity of referendum; and ordinance powers. The amount of money raised for village expenses is generally small, and village government excites but little interest. The regular parties do not function in village elections, local parties being the rule. To consolidate the township and school district with the village would lessen the number of necessary officers, making it possible to pay salaries for regular service and increase the electoral interest in local affairs. Such offices would call out a better class of men for office. The local self-government of the village, township and school district is in a chaotic condition, and a great opportunity for training in democracy is thus neglected.

Village Improvement.— Village improvement is a term coming into common use, to designate all forms of civic improvement in small incorporated places. The term just came into use in New England, but may well spread to other parts of the country, as the village problem becomes a conscious one there.

The term includes both the activities of the corporation and of private enterprise for village betterment. Recently it has come to include social and economic improvements other than what are generally known as municipal improvements, such as fire protection, street lighting, paving, provision of parks. An evidence of the widespread effort and attention to village improvement is the publication of a special edition of *The American City*, devoted almost exclusively to the town and village (since 1913).

In the past much more attention has been devoted to the physical improvement of the more enterprising villages than to other aspects. The great majority of villages (whether incorporated as villages, towns or cities) now have some form of municipal water supply. They quite often have some portion of the business district paved, and sidewalks quite generally. Municipal ownership and operation of electric light plants is very common. Even very small places have some park area. Public lighting is customary.

Naturally these are of limited scope. Water supply often has been installed chiefly for fire protection. Sewers are seldom found in places under 1,000, although most communities have some private systems of drainage. These, from the sanitary point of view, are very imperfectly guarded. Water supply is largely from shallow wells. Garbage disposal is of the most primitive kind. Sanitary conditions in villages from these points of view are very far from desirable.

Street paving is rather unusual, although frequently the business district or main street is paved. Many permanent sidewalks constructed privately preceded general municipal provision for such, and in general one-fourth of village streets are so provided.

In the Middle West villages such improvements are more frequently found than elsewhere. Urban ambitions and imitation are most active here. Special influences, such as summer residents, have been strong in New England communities. But in the awakened villages and towns of these older States, and in the South, village improvement has a large future.

The growing practice of the light companies of larger towns and cities to furnish power for light in the surrounding villages is an important advance.

Village street plans have in general been based upon the supposition that the place would sooner or later become a town or city. Streets are usually the width of a country road, and often much wider. Moreover, all streets are generally of like width. This is in marked contrast with the Old World village, with its single main street, and its courts and lanes. In part this accounts for the unkempt appearance of the average village, with its little, grass-and-weed-grown streets, faint wagon track and straggling footpath. Little used for traffic, and fenced off from the private house-lots, the

street is a neglected space. There has been little attention paid in this country to town planing, even for new communities.

The lay-out of the average village is rectangular and seldom takes any account of natural features. The American village is as a result seldom either orderly or picturesque. It consequently leaves much to be desired as a place of residence for retiring farmers, and must speedily correct such a condition if it would compete with towns and smaller cities.

Most villages prescribe fire-limits and compel brick or sheeted buildings in the business district. But such limited fire-ordinances as exist are very inadequately enforced. The fire hazard is exceptionally high and the losses out of all proportion as compared with the cities. Sweeping conflagrations are all too common.

The great majority of villages, even of a few hundred people, have graded schools, including high school facilities of a limited range. The school is usually the best building in the place, most frequently answering to modern requirements, and in many cases constructed with some thought of its acting in some sense as a social centre.

Despair has settled down upon a great many of the villages which were settled one or more generations ago, and have seen their neighbors thrive and grow. Stationary or losing population, the aged and conservative character of a large proportion of the population make effort for improvement difficult. But current population movements will repopulate and somewhat change the character of village population. The average village will come to realize what its necessary future must be. A new civic spirit and outlook is coming to the American village. A change of front from imitation of the town and city to seeking to become an adequate village centre for its district is inevitable.

A first necessity of successful village improvement is a vision of the scope, the place and the function of the village community in American life. Journals like the *American City* can do much. The organized municipal interests of the country have hitherto paid little or no attention to places other than cities and the larger towns. The Massachusetts Civic League, under the able direction of E. T. Hartman, comes nearest to an organization such as is necessary for this purpose. But village improvement must by no means be confined to merely physical improvement, and least of all the mere imitation of urban communities.

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VILLAGE COMMUNITIES. These are supposed to have been the primitive form of organized human society. In Africa, the South Sea Islands and among the American aborigines who have progressed beyond savage isolation the village community exists, a survival of a system which was probably universal in the pre-historic period, and was prevalent throughout a large part of Europe, as it is to-day in Russia, long after Greece and Rome had built flourishing cities and established new forms of civilization. In the Russian *mir*, a word which signifies union, all the land is held in common, and is divided for use among the several families. Such was the system of land tenure among the ancient German tribes, when they first came within the observation of the Romans, and although at a very early date — probably before the tribes from the North swept down on the Roman dominions — private proprietorship of land had become a fixed institution among them — the village continued to have its common or "green," which every villager had a right to use and enjoy. This communal land system was brought to the New World by the first settlers, being represented by the Boston Common, and the "Commons" of New York now known as City Hall Park, and other similar public reserves.

It is unnecessary to trace the village community from its primitive condition through the feudal and more recent periods to the present day. Throughout all changes something of the commerical system survived, and the common enjoyment of land, which had been nearly effaced by private proprietorship, is being revived in the creation and the extension of public parks, open to every citizen. In Russia, on the other hand, the *mir*, or village community, is giving way to private proprietorship, Russia in this, as in some other respects, being in a period of transition from which western Europe evoluted centuries ago.

VILLAGE IMPROVEMENTS. See VILLAGE COMMUNITIES.

VILLAGRAN, vēl-yä-grän', or **VILLAGRA, Francisco,** Spanish soldier and colonial governor: b. Astorga, Spain, 1507; d. Concepcion, Chile, 15 July 1563. He accompanied Valdivia to Peru, was engaged with him in the conquest of Chile in 1540–45, and in 1547–49 was deputy governor in the absence of Valdivia. Upon the death of Valdivia in the Araucanian uprising of 1553–54 Villagran became governor. While proceeding to march against the Araucanians he was severely defeated at Marigueuu in February 1554. He, however, continued the war for months, killing the famous Indian chief Lantaro at Mataquito in 1556. He was superseded by Garcia Hurtado de Mendoza in 1557; and that governor, in order to be rid of his dangerous rival, sent Villagran a prisoner to Peru. On his release he went to Spain, secured a royal commission to succeed Mendoza and returned in 1561 to take charge of the colony. He pushed the Spanish conquests beyond the Andes, and though much harassed by the uprisings of the Araucanians, continued in office until his death.

VILLAIN, or **VILLEIN.** See VILLEINS.

VILLARD, vĭl-ärd', **Henry,** American journalist and capitalist: b. Speyer, Bavaria, 11 April 1835; d. Dobbs Ferry, N. Y., 11 Nov. 1900. His real name was Hilgard, but he changed it to Villard on coming to the United States in 1853. He entered upon journalistic work, writing at first for German-American journals, then as correspondent for the Cincinnati *Commercial*, and for the Chicago *Tribune*. He reported the Lincoln-Douglas debate of 1858 for eastern newspapers; was at the National Republican Convention of 1860; and during the Civil War won a wide reputation as a war correspondent, going to the front with the Army of the Potomac; he also

conducted a correspondents' bureau at Washington. In 1866 he went abroad to report the Austro-Prussian war for the New York *Tribune*. In 1868–71 he was secretary of the Social Science Association in Boston. In 1873 he represented German bondholders in financial dealings with some of the railroads of the Pacific Coast; going to the Northwest he organized the Oregon Railway and Transportation Company; and in 1881 by a pooling of railway interests formed the Northern Pacific Railroad Company, and was elected its president. The road was completed in 1883, but was involved in financial difficulties, on account of which Villard lost a large part of his fortune, and resigned the presidency of the road. He regained his financial standing with the aid of German capital, and in 1889 became one of the directors of the Northern Pacific, holding that position until 1893, when the road went into the hands of receivers. He was also interested in Edison's inventions; in 1890 he bought the Edison Lamp Company at Newark, and later the Edison Machine Works at Schenectady, where he organized the Edison General Electric Company, of which he was president two years. In 1881 he obtained a controlling interest in the New York *Evening Post*, and *Nation*. Consult his 'Memoirs' (3 vols., Boston 1904).

VILLARI, vēl'lą-rē, **Pasquale**, Italian historian: b. Naples, 3 Oct. 1827; d. Florence, December 1917. The son of a lawyer, he migrated to Florence after the failure of the independence movement in 1848 and began collecting new materials on Savonarola. He published the fruits of his researches in the *Archivio Storico Italiano* in 1856, and three years later was nominated professor of the philosophy of history at the University of Pisa, about the time that he published his 'Life of Savonarola,' a work that established his reputation as a historian of wide vision and artistic representation. His social political writings, however, exerted the most powerful influence in Italy, especially after the collapse of 1866, when he plainly told his countrymen that the nation itself was directly responsible for that inglorious campaign. His second most important work, the 'Life of Machiavelli,' appeared a few years later. In 1867 Villari was elected to the Chamber of Deputies, and appointed to the senate in 1884, and became its vice-president in 1887. In the Rudini Cabinet of 1891 he was Minister of Education, when he introduced valuable reforms in the curriculum of the schools.

VILLARS, vē-lär, **Claude Louis Hector**, Duc de, French soldier: b. Moulins, France, 8 May 1653; d. Turin, Italy, 17 June 1734. He entered the army in 1672, served under Turenne, Luxembourg and Créqui; was appointed lieutenant-general in 1693, and in 1699–1701 he was Ambassador to Vienna. During the war of the Spanish Succession he received in 1702 his first independent command, defeated Prince Louis of Baden at Friedlingen, 14 October, and was created marshal. He joined the Elector of Bavaria in 1703, gained a signal victory at Höchstädt in that year. In 1709 he succeeded Vendôme as commander of the army in the Netherlands, and in order to save Mons he engaged Marlborough and Eugene at Malplaquet, 12 Sept. 1709. He was defeated and badly wounded, but was victorious over the allies at Denain, 24 July 1712. In March 1714, he concluded the peace of Rastatt. On the outbreak of the war with Austria he again took the field with rank of grand-marshal of France, and conducted a successful campaign with his wonted energy, although he was then 81. He resigned his command because of the unwillingness of the king of Sardinia to co-operate with his plans, but died before his recall came. His 'Mémoires' (1884–92) are not regarded as authentic. Consult the biographies by Seguy (1735), Anquetil (1784), and Babeau (1892).

VILLARSIA, vĭl-lär'sĭ-a, genus of gamopetalous plants, of the natural order *Gentianaceæ*, whose species are widely distributed over the world, and are either aquatic or marsh plants, with entire leaves and yellow flowers. *V. nymphæoides* is common in many parts of Europe, from Denmark to the Mediterranean; and is very abundant in Holland, often covering large tracts of the canals with its beautiful flowers and leaves. It is easily cultivated, and abounds in southern Siberia.

VILLEHARDOUIN, vēl-är-doo-ăń, **Geoffroi de**, French chronicler: b. Villehardouin, near Troyes, France, about 1160; d. before 1213. He was one of the earliest of French historians, and of his life little is known save what is gathered from his 'Histoire de la Conquête de Constantinople.' He seems to have taken an important part in the Fourth Crusade; took the cross in 1199; was one of the commissioners to arrange with the Venetians for the transportation of the crusaders; fought at the siege of Constantinople, and gained high repute as a diplomat. He became marshal of Romaine after the establishment of the Latin empire and was granted the fief of Messina in 1207. From this time all trace of him is lost. His 'Histoire' is a clear and collected relation of the events of the Crusade from 1198–1207, and is valuable both from the historical and literary standpoint. The first printed edition was that of 1585; later ones include Du Cange (1657); Dom Brail (1823); N. de Wailly (1872; 3d ed., 1882). Consult Sainte-Beuve's 'Causeries du Lundi' (Vol. IX).

VILLEINS, serfs who grew up along with the feudal customs of Europe. A feudal lord received from his superior, on condition of military service, a grant of conquered land, which he distributed among his dependents on two distinct tenures or classes of tenure. The freemen, who were the kindred or followers of the conqueror, received their land on the same condition of military service as himself. The conquered or the serfs who were not directly employed in domestic or personal service were allowed to cultivate the land on the tenure of menial or non-military services, either determinate or indeterminate. Such is the simple origin of villenage. In some cases the villeins were at the absolute disposal of their lord, who could sell them or deal with them as he pleased. In others they were attached to the soil, and formed part of its movable wealth. Sometimes they held by defined services, such as making and repairing roads, felling timber, or cultivating the lord's domain; but even then the control of justice was commonly in the hands of their lord, against whose oppression they had no redress. Hallam says that in England

they were incapable of property; yet even in England, when the laws began to extend their protection to personal rights, the association of villeins with the soil established a good tenure of property, subject to customary services, which were finally commuted into money rents. Villenage appears to have died out in England, without special legislation to abolish it. The system of agricultural labor under yearly contract, with violation of contract on the part of the laborer punishable by imprisonment, which continued in England down to the latter part of the 19th century, partook essentially of villenage, as the laborers had either to face prosecution as vagrants, or renew each year the obligation of servitude, which might fairly be called involuntary. Villein is the progenitor of the modern word villain, and has degenerated in meaning.

Villenage — if the involuntary servitude of white persons not convicted of crime comes within that term — has never existed in the United States, except in the form of indentured apprenticeship, which in colonial days was practically serfdom, and of the form of servitude known as «redemption,» when immigrants were sold and bound out for a term of years to pay the expenses of their passage. «Redemption» servitude existed long after the United States became independent, and many respectable and even prominent families are descended from «redemptioners.» Consult Page, T. W., 'End of Villainage in England' (New York 1900).

The peons of Mexico and New Mexico were essentially villeins attached to the soil. Peonage was abolished in the United States, 2 March 1867. See PEONS AND PEONAGE; SERFS; SLAVERY; UNITED STATES — SLAVERY.

VILLEMAIN, vēl-măn, **Abel François,** French author: b. Paris, 11 June 1790; d. there, 8 May 1870. He was educated at the Lycée Louis-le-Grand, and in 1810 became assistant professor of rhetoric at the Lycée Charlemagne. He was subsequently professor at the Ecole Normale and also occupied the chair of eloquence at the Sorbonne. He was elected to the Academy in 1821, and in 1827 was elected with Lacretelle and Chateaubriand to draft its protest against the revival of the censorship. In 1827 he was a deputy, became a peer of France in 1832, was Minister of Public Instruction in 1838-44 and in the last-named year resigned because of ill health. After the establishment of the empire he retired from politics. He was three times awarded the prize of the Academy; in 1812 for his 'Euloge de Montaigne'; in 1814 for 'Advantages et Inconvénients de la Critique'; and for his 'Euloge de Montesquieu' in 1816. As a critic his keen wit, quick appreciation and brilliant command of rhetoric made him a power in French letters. His works include 'Histoire de Cromwell' (2 vols., 1819); 'Discours et Mélanges Littéraires' (1823); 'Cours de Littérature Française' (5 vols., 1828-29); 'Souvenirs Contemporains d'Histoire et de Littérature' (1856); 'Histoire de Grégoire VII' (1873), etc.

VILLEMESSANT, vēl-mĕ-săn, **Jean Hippolyte Cartier,** French journalist: b. Rouen, 22 April 1812; d. Monte Carlo, France, 11 April 1879. He went to Paris in 1839, entered journalism and for a time wrote the fashion department of the Girardin *Presse*, using the signature «Louise de Saint Loup.» In 1854 he re-established *Le Figaro* as a semi-weekly, making it a daily after 1865. Consult his 'Mémoires d'un Journaliste' (1867).

VILLENAGE. See VILLEINS.

VILLENEUVE, vēl-nŭv', **Pierre-Charles-Jean-Baptiste-Sylvestre De,** French admiral: b. Valensoles, department of Basses-Alpes, 31 Dec. 1763; d. 22 April 1806, of ancient and noble family. Villeneuve entered the navy in his 15th year, and passed as captain 1793. In 1796 he was raised to the rank of 'captain of division' (equivalent to *commodore*), and commanded the rear division at the battle of the Nile. In 1804 he was nominated vice-admiral; and in the following year was appointed to the command of the Toulon squadron. Having sailed to the Azores, he encountered a British squadron, under Sir Robert Calder, and a fierce fight ensued, which lasted till dark. On the following morning, neither side cared to renew the engagement (for which Villeneuve was abused by *Le Moniteur*, and Admiral Calder was put on trial), and Villeneuve, unable to reach Brest, returned to Cadiz, where he was strictly blockaded by Nelson. The severity with which he was treated by Napoleon on account of these reverses, and the further indignity of being superseded, goaded Villeneuve into the desperate resolve of engaging Nelson before his successor could arrive at Cadiz. The memorable conflict of Trafalgar was the result. Villeneuve, whose vessel, the *Bucentaure*, was completely dismasted, was forced to strike his flag; and was made prisoner, and conveyed to England, whence he returned to France April 1806. He stopped at Rennes, with the view of ascertaining the kind of reception he was likely to meet at Paris from the emperor. The result of his inquiries was unfavorable; and on the morning of 22 April he was found dead in bed, with six knife-wounds in his heart, inflicted by his own hand.

VILLENEUVE D'AGEN, vēl-nŭv' dà-zhŏng', or **VILLENEUVE-SUR-LOT,** -sür-lō', France, town in the department of Lot-et-Garonne; in a charming valley, 22 miles by rail north of Agen. The river Lot, which flows through the town, is here crossed by a remarkably bold bridge of a single arch, with span of 118 feet and height of 59 feet. The town, formerly called Gajac, was completely destroyed in the wars of the early part of the 13th century. When rebuilt it received its present name. A great trade is carried on in wines, prunes, cattle, and iron, and there are manufactures of paper, cloth, table-linen and copperwares. Pop. 13,181.

VILLIERS, vĭl'yĕrz, **Charles Pelham,** English statesman: b. London, 3 Jan. 1802; d. 16 Jan. 1898. He was graduated from Saint John's College, Cambridge, in 1824, was called to the bar of Lincoln's Inn in 1827, appointed secretary to the master of the rolls in 1830, the examiner of witnesses at the Court of Chancery in 1833. He was returned to Parliament for Wolverhampton in 1835 and until his death remained the representative of that constituency. From the first he strongly advocated the repeal of the corn-laws, and he was a supporter of free trade before Cobden and Bright entered Parliament and while Gladstone still favored the corn-laws. After the formation of the Anti-

Corn-Law League Villiers became the leader of the movement in Parliament and continued to press the agitation. The accession of Bright and Cobden to the ranks of Parliamentary free traders further strengthened the cause, and Villiers saw his purpose achieved when in 1846 Peel joined their ranks. In 1859 he became a member of the Palmerston Cabinet and also president of the Poor-Law Board, which posts he resigned in 1866. During the American Civil War he ably seconded Palmerston in his support of the Northern States, and in later years was a determined advocate of the Union of Ireland and Great Britain. He introduced in Parliament the Union Chargeability Bill and secured its passage in 1865, supported the Penny-Postage Act and throughout his entire career never deviated from the principles of reform to which he had pledged himself on his election in 1835. A selection from his speeches was published in 'Free-Trade Speeches of Hon. Charles Pelham Villiers, M.P.' (2 vols. 1883).

VILLIERS, Frederic, English artist and war correspondent: b. London, 23 April 1852. He was educated in France and studied at South Kensington and the Royal Academy. He was war artist for *The Graphic* in Serbia in 1876 and accompanied the Russian army in Turkey in 1877–78. He was a witness of the bombardment of Alexandria in 1882, was subsequently in Abyssinia, Bulgaria, Serbia and Burma, and in 1887 made a lecture tour in this country. As special artist and correspondent for the New York *Herald* and other journals he accompanied the Japanese army in 1894, represented the London *Standard* in 1897 during the Græco-Turkish War and in 1898 accompanied Kitchener in the Sudan. During the Boer War in 1899 he was in South Africa as correspondent for the *Illustrated London News*. He has written and illustrated several books.

VILLIERS, George, Duke of Buckingham. See BUCKINGHAM, DUKE OF.

VILLIERS, John Henry de, 1ST BARON DE VILLIERS: b. 1842; d. 2 Sept. 1914. He was lord chief justice of Cape of Good Hope, president of the Legislative Council, member of the Judicial Committee of the Privy Council and became chief justice of the Union of South Africa.

VILLISCA, vĭl-ĭs'kạ, Iowa, town in Montgomery County, at the confluence of the East and West branches of the Nodaway River, and on the Chicago, Burlington and Quincy Railroad, 65 miles southeast of Council Bluffs. It is in a rich agricultural region; in the vicinity are deposits of fire-clay and soapstone. The chief manufactures are clay products, which include brick and tile, and flour and dairy products. There are large shipments of fruit, wheat, corn, hay, vegetables, butter, eggs, poultry and livestock. There are two banks and a newspaper. Pop. 2,132.

VILLON, vēl-lôn', **François,** French poet: b. Paris, 1431; d. about 1484. His real name was François de Montcorbier, but he adopted the name of his guardian, Guillaume de Villon, a priest. He received the degree of master of arts in 1452, and three years later fled the country because he had killed a priest. He was pardoned in 1456 when it had become clear that the deed was done in self-defense, but immediately afterward he engaged in a series of extensive robberies, for which he was condemned to death. While lying in prison awaiting the execution of his sentence he wrote the epitaph in which he depicts himself and his companions suspended on the gibbet. His sentence was commuted to banishment, but in 1461 he was again in prison, this time at Meung, perhaps for sacrilege. He was set free in October of that year in consequence of a jail delivery ordered by Louis XI on the occasion of his visit to the town. Nothing is known of his subsequent career. His works include 'Le Petit Testament' (1456); 'Le Grand Testament' (about 1461); and numerous ballads. The first dated edition of his works is that of 1489, and of modern editions the best are those of Moland (1879) and Longnon (1892). There is an English translation of much of his best work by John Payne (new ed., 1892). Andrew Lang, Swinburne and others have also made renderings. Consult Longnon, 'Etude Biographique' (1878); Stevenson, R. L., 'Familiar Studies' (1888); Schwob, 'Le Jargon des Coquillards en 1455' (1890); Paris, 'François Villon' (1901).

VILNA, or WILNA, Russia, (1) Capital of the government of the same name, on the Vilia, 415 miles southwest of Petrograd, and the 10th city of European Russia. It was the former capital of Lithuania, but came under Russian control in 1795. It is picturesquely situated, partly on hills, partly on the banks of the river, and contains numerous convents and churches. The most notable buildings are the governor's palace, the town-house and the buildings of the now suppressed university. The Greek and the Roman Catholic cathedrals are also worthy of notice. Educational institutions are numerous, including a fine museum and large public library. The manufactures include tobacco, lead pencils, hats, leather, etc., and there is an extensive trade in grain and timber. Vilna dates from the 10th century. Pop., of which one-half is Lithuanian, about 204,290. (2) The government, which lies on the Baltic, has an area of 16,181 square miles and is a low marshy country. It is well watered by the Dvina, Niemen and Vilia rivers, which also provide means of transportation for a large area. Pop. about 2,083,200.

VINAGO, vī-nā'gō, genus of fruit-pigeons, family *Columbidæ*, the members of which have a comparatively stout solid bill, laterally compressed; with a hard, hooked and inflated tip; the tarsi short; feet large, and formed for perching or grasping. The species, of which not many are known, are natives of tropical Asia and Africa; they inhabit forests, and are shy and timid.

VINAIGRETTE (French, from *vinaigre*, vinegar; from *vin*, wine; *aigre*, acid, sour), a small box or bottle (the inner cover of which is perforated) for containing a bit of sponge saturated with aromatic vinegar or the like, used to stimulate or refresh by the sense of smell.

VINALHAVEN, vī"nạl-hā'vĕn, Me., town in Knox County, about 13 miles east of Rockland, the county-seat. The town is made of several small islands in Penobscot Bay. The

granite quarries are a source of income and the place is a favorite summer resort. Permanent pop. 2,300.

VINCENNES, văn-sĕn, **Jean Baptiste Bissot,** SIEUR DE, Canadian explorer: b. Quebec, Canada, January 1688; d. Illinois, 1736. He came from a wealthy family of Quebec, was a relative of the explorer Louis Joliet, and from early youth was engaged in Western expeditions. He became an ensign in the Canadian army in 1701 and was detailed to service in the West, where he became a favorite with the Miami Indians. In 1704 he rescued some Iroquois prisoners from the Ottawas; saved Detroit from an invasion by the Foxes in 1712; and afterward resided successively in Miami, Ohio, and Michigan. He founded the city of Vincennes, Ind., where he built a fort and a trading-post, and in 1736 he joined the expedition against the Chickasaw Indians. The expedition was conducted by d'Artaguette and was at first successful, but a series of victories were followed by defeat owing to the desertion of the Miamis. Vincennes was captured and together with the commander and others of the expedition was burned at the stake.

VINCENNES, France, a town in the department of the Seine, a southeastern suburb of Paris, just outside the walls and close to the Bois-de-Vincennes. Its large old castle, which is surrounded by lofty walls and deep ditches, was once the frequent residence of the French kings, and was long a state prison. It now forms part of the defenses of Paris. The donjon or keep is a square tower 170 feet high with walls 16 feet thick. The Bois-de-Vincennes (q.v.) is a beautiful and extensive public park which contains an exercise-ground for infantry, and an area set apart for artillery purposes. There are manufactories of chemicals and hardware; also a large military school and hospital. Pop. of town, about 33,000; of commune, about 40,000.

VINCENNES, vĭn-sĕnz', Ind., city, county-seat of Knox County, on the Wabash River and on the Pennsylvania, the Baltimore and Ohio, and the Cleveland, Cincinnati, Chicago and Saint Louis railroads, about 105 miles southwest of Indianapolis, and 50 miles north of Evansville. It is in a fertile agricultural region, a rich prairie section, on a gradual slope to the river. There are a round hundred of manufacturing establishments, with annual products approaching $4,000,000. The chief manufactures are flour, lumber products, sewer-pipe, brick, tile, wrapping paper, iron and tin products, glass, furniture, paper, agricultural implements, cement, plaster, and foundry and machine-shop products. The city is laid out in squares, with streets nearly all 50 feet wide. Harrison Park, the plaza at the city-hall, and the Courthouse square are the chief park-lands owned by the city. The principal public buildings are the county courthouse ($400,000), the city-hall ($100,000), the government building, the old hall where the legislature met, the house occupied by William Henry Harrison when he was governor of the Territory, the church once used as the Roman Catholic cathedral, the Vincennes Sanatorium and Saint Vincent's Orphanage for boys. The educational institutions are two high schools, one for white pupils and one for colored (1882), Vincennes University, founded in 1806, Saint Rose Academy (R.C.), public and parish graded schools, a public library and three school libraries. There are four banks and three daily besides several weekly newspapers. Vincennes was incorporated as a borough in 1839 and as a city in 1856. The government is administered under the charter of 1867 which provides for a mayor, who holds office two years, and a city council. In 1900 Vincennes had a population of 10,249; (1910) 14,895; (1918 est.) 17,500.

History.— In the vicinity of Vincennes are many Indian mounds. The first missionaries and explorers, who entered this part of Indiana by way of the river, found, where is now the city, an Indian village called Chip-kaw-kay. Vincennes is the oldest place in the State. In 1702 the French built here a fort, and for several years it was the seat of the empire of France in the Ohio Valley. French from Canada settled here, and the place was called "The Post," for over 30 years, when the name was changed to Vincennes, in honor of François Morgan de Vinsenne, who had been one of the officers of the fort. In 1763 the British obtained possession of the place, but owing to disturbed conditions in the East General Gage gave the fort but little attention, so Vincennes had only a self-government until 1777, when, on 19 May Lieutenant-Governor Abbot of Detroit arrived and took possession. He called the place Fort Sackville. The British incited the Indians to attacks on the whites who were under French rule or who were in rebellion against Great Britain. George Rogers Clark, of Kentucky, desiring to protect his country from those disastrous attacks, conceived the plan of capturing Detroit, Vincennes and Kaskaskia, and submitted his plan to Patrick Henry, then governor of Virginia. After much argument on the part of Clark and hesitancy on the part of Henry, the governor authorized Clark to recruit 350 Virginians for the expedition, and gave him money and ammunition. Clark proceeded with the undertaking, and 4 July 1778 captured Kaskaskia. With the aid of Father Gibault, of Kaskaskia, Clark secured the good will of the French people of Vincennes. In 1779 Clark's Virginians took possession of Fort Sackville. It was some time before the British in Detroit heard of the changes in the Ohio Valley. Then a force of 500 regulars and Indians under the British commander, Henry Hamilton, embarked for Vincennes. Captain Helm, in charge of the place, did not learn of the approach of the British until they were within three miles of the fort. His garrison consisted of himself, a few inhabitants and one American soldier. The inhabitants went to their homes and Helm planted his two cannon; he took charge of one and the remainder of his force stood by the other. When Hamilton demanded a surrender, Helm said no man could enter the fort until the terms of surrender were made known. Hamilton promised them the honors of war and then Helm and his force of one man surrendered. Clark did not hear of the fate of Helm for some time. Francis Vigo (after whom the county is named), a merchant of Saint Louis, and a patriotic American, offered to go to Vincennes to attend to furnishing the garrison with supplies in accordance with

Helm's request, sent to Clark before the arrival of the British. When Vigo approached Vincennes he was more than surprised to learn that the place was in possession of the British, who at once arrested him. He demanded release on the ground that he was from Saint Louis, but Hamilton retained him until it was discovered that the French inhabitants would cut off the source of supplies for the soldiers unless Vigo were released. Vigo was finally given his freedom, on condition that "on his way to Saint Louis he would do no hostile act to the British interest." This he promised, and at once took a canoe, descended the Wabash to the Ohio, then to the Mississippi and arrived at Saint Louis without breaking his pledge. As the boat touched the shore, Vigo sprang on land, then back into the boat, and started for Kaskaskia, to inform Clark about Vincennes. Clark saw at once that unless something were done the whole Ohio Valley would be lost to America. Desperate measures were resorted to, for transporting a small force of poorly clothed men was difficult at any time, but almost impossible in winter. On 5 Feb. 1779 he sent 64 men by boats, carrying provisions and ammunition, and with 170 men they began a march of 200 miles. There were no tents, no towns or even settlements where they were sure of finding friends. All the inhabitants of Kaskaskia accompanied them the first few miles of the journey; then soldiers and citizens knelt and the parish priest gave them his blessing, and Clark and his men marched on to Vincennes, leaving the people on their knees praying for the success of the American nation. On the 23d of February Clark and his men arrived at the heights back of Vincennes, and sending word to the French inhabitants that they were there, the hungry soldiers were soon supplied with provisions. That night the Americans marched into the town and at once began an attack on the fort. The next morning Hamilton surrendered, and the American flag was placed on the fort, and then and there the name was changed from Fort Sackville to Fort Patrick Henry. The place was held by Virginia until 1783, when it was ceded to the United States. In 1787 the first court was held in the place, and in 1800 the Indiana Territorry was established and Vincennes was made the capital. In 1813 the territorial capital was removed to Corydon. A university and a library had been established. The first church in the Northwest Territory was built in Vincennes, in 1742, by Father Meurin, from France. The first school in Indiana was established here by Father Rivet.

Vincennes brought to the United States the great Middle West and made the Louisiana Purchase a possibility. Had it not been for the bravery, intelligence and patriotism of George Rogers Clark and his Virginians, and the devoted French of the Ohio Valley, the western limit of the United States would have been, for many years at least, the Alleghany Mountains. But Vincennes has done more for the preservation and extension of the Union; here Aaron Burr received his first and most decided check when he sought to break up the Union. The first provision made by any government for the care of the insane was made by the Indiana constitution, and to Benjamin Parke of Vincennes is due the credit of inserting the clause regarding the matter. Not only may Vincennes, "on the banks of the Wabash," be called "The Key to the Northwest," but also a historic city that was the scene of many heroic deeds. Consult Law, 'The Colonial History of Vincennes,' and Smith in Powell's 'Historic Towns of the Western States.'

VINCENNES UNIVERSITY, located at Vincennes, Ind., non-sectarian and coeducational, is the oldest university west of the Alleghany Mountains. It includes the following departments: College courses leading to degres for A.B., A.M.; normal (teachers' training course)—accredited for classes "A," "B," "C"; agricultural, courses in agronomy, animal husbandry, horticulture; home economics, courses in cooking, sewing, dietetics, household management, home nursing, etc.; preparatory, a commissioned high school under the laws of Indiana; music, courses in piano, voice and violin; expression, courses in reading, dramatics, defective speech correction. The annual enrolment in all departments averages 400 students; the teaching force numbers 24. It owes its establishment to a grant of land made by Congress in 1804 in the Vincennes land district for the use of a seminary of learning. In 1806 Vincennes University was incorporated and designated as the recipient of the land granted by Congress. In 1830 and subsequently the legislature assumed the right to sell and rent the lands and appropriate the receipts for State purposes. The resources of the university were thus so crippled that it was forced to suspend work for a time; but in 1843 the trustees carried the matter into the courts and finally by appeal to the Supreme Court of the United States obtained judgment in favor of the university.

VINCENT, vĭn'sĕnt (or **VINCENTIUS,** vĭn-sĕn'shĭ-ŭs), **Saint,** Christian martyr: d. about 303. He was archdeacon of Saragossa in Spain, and in the persecution of Diocletian was put to death for the Christian faith at Valencia. The narrative of his martyrdom, called 'Passio Sancti Vincentii' (in 'Acta Sanctorum' under date 2 January), is very ancient, being quoted by Augustine, Prudentius, Paulinus Nolanus, Venantius Fortunatus, and Gregorius Turonensis. It is full of almost incredible details of tortures and miracles.

VINCENT, vĭn'sĕnt, **Boyd,** American Protestant Episcopal bishop: b. Erie, Pa., 18 May 1845. He was graduated from Yale in 1867 and from the Berkeley Divinity School, Middletown, Conn., in 1871. He took orders in the ministry in the last named year, was assistant at Saint Paul's, Erie, 1871–72, rector of Cross and Crown Church, Erie, 1872–74 and rector of Calvary Church, Pittsburgh, 1874–89. In 1889 he was consecrated bishop coadjutor of southern Ohio. In 1910 he was chairman of the Episcopal House of Bishops.

VINCENT, Charles Edward Howard, English soldier and member of Parliament: b. Slinfold, Sussex, 31 May 1849; d. 1908. Educated at Westminster School and the Military College at Sandhurst, he served in the army 1868–73, was called to the bar of the Inner Temple in 1876 and was military commissioner

of the London *Daily Telegraph* at the opening of the Russo-Turkish War in 1877. In 1878 he reorganized the metropolitan detective system and has sat in Parliament as a Conservative member for Sheffield since 1885. He has published 'Russia's Advance Eastward' (1872); 'Military Geography' (1873); 'Law of Criticism and Libel' (1877); 'Law of Extradition' (1880); 'Howard Vincent Map of British Empire' (10th ed., 1902); 'Police Code and Manual of Criminal Law,' which has passed some 15 editions, etc.

VINCENT, Frank, American traveler: b. Brooklyn, N. Y., 2 April 1848; d. 1916. He was educated at Yale and for many years devoted himself to a systematic tour of the world. In 1884 he gave to the New York Metropolitan Museum of Art an extensive collection of Indo-Chinese antiquities and art. His published works include 'The Land of the White Elephant' (1874); 'Through and Through the Tropics' (1876); 'Norsk, Lapp and Finn' (1881); 'Around and About South America' (1890); 'In and Out of Central America' (1891); 'Actual Africa' (1895), etc.

VINCENT, George Edgar, American educator, the son of Bishop John Heyl Vincent: b. 21 March 1864 at Rockford, Ill. Graduated at Yale, A.B., 1885; Ph.D., University of Chicago, 1896; LL.D., 1911; LL.D., Yale University, 1911; also from the University of Michigan, 1913. After graduation from college he engaged for a time in literary and editorial work and spent a year abroad. He was a Fellow in sociology at Chicago while working for his degree. Thence he was promoted as assistant professor, associate professor and then professor and in 1900 was made dean of the junior colleges. From 1907 to 1911 he was dean of the faculties of arts, literature and science. Then he became president of the University of Minnesota (1911–17). Since 15 May 1917 he has served as president of the Rockefeller Foundation of New York. At the same time is a member of the General Education Board. In 1888 he became vice-president of the Chautauqua System. Ten years later he was made principal of instruction and served as president 1907–15 and since then has been honorary president. He served a term as president of the American Sociological Society. He is author of 'The Social Mind and Education' (1896); (with Albion W. Small) 'An Introduction to the Study of Society' (1895).

VINCENT, John Heyl, American Methodist bishop: b. Tuscaloosa, Ala., 23 Feb. 1832. He was educated at the Wesleyan Institute, Newark, N. J., engaged in preaching at 18 and in 1857 was ordained elder. In 1857–65 he was pastor at Galena, Ill., and at Chicago. He founded the *Sunday-School Quarterly* in 1865 and the *Sunday-School Teacher* in 1866, embodying in them the Sunday-school lesson-system since widely adopted. In 1874 he established, in conjunction with Louis Miller, the Chautauqua Assembly, of which he was chancellor 1878–1900. He was elected bishop in 1888, residing at Topeka, Kan., until 1900, when he became resident bishop in charge of the European work of the Methodist Episcopal Church. In addition to various textbooks published for the use of the Chautauqua Society, he has written 'Little Footprints in Bible Lands' (1861); 'The Modern Sunday-School' (1887); 'Unto Him' (1899); 'Family Worship for Every Day' (1905), etc.

VINCENT, Leon Henry, American author and lecturer: b. Chicago, 1 Jan. 1859. He was graduated from Syracuse University and since 1885 has given his time mainly to lecturing upon English and American literature. He has published 'The Bibliotaph and Other People' (1898); 'Hotel de Rambouillet and the Précieuses' (1900); 'The French Academy' (1901); 'Corneille' (1901); 'Molière' (1902).

VINCENT, Marvin Richardson, American Presbyterian clergyman: b. Poughkeepsie, N. Y., 11 Sept. 1834. He was graduated at Columbia in 1854; was classical instructor in the Columbia Grammar School 1854–58 and professor of languages in the Methodist University of Troy, N. Y., 1858–60. In the year last named he entered the Methodist ministry, but three years later became a Presbyterian and was successively pastor of the First Presbyterian Church of Troy, 1863–73, and of the church of the Covenant, New York, 1873–88. Since 1888 he has been professor of New Testament criticism at Union Theological Seminary, New York. With C. T. Lewis he translated Bengel's 'Gnomon of the New Testament' (1860–62). He is the author of 'Amusement a Force in Christian Training' (1867); 'The Two Prodigals' (1876); 'Gates into the Psalm Country,' a series of descriptions (1878); 'Stranger and Guest' (1879); 'Faith and Character' (1880); 'The Minister's Handbook' (1882); 'Christ as a Teacher' (1886); 'Word Studies in the New Testament' (1887–1900); 'That Monster, the Higher Critic' (1894); 'The Age of Hildebrand' (1896); 'A History of the Textual Criticism of the New Testament' (1899), etc. In 1904 he published a translation of Dante's 'Inferno.'

VINCENT OF BEAUVAIS, French priest and encyclopedist: b. about 1190; d. 1264. The years of his birth and death are uncertain and those given above are most generally believed to be approximately correct. Of his personal history little also is known. It is believed that Vincent joined the Dominicans in Paris about the year 1218 and with the exception of extended visits to Louis IX at Royaumont the remainder of his life was spent in the monastery of his order at Beauvais. Possessed of a keen, analytic and orderly mind and endowed with a remarkable capacity for work, Vincent undertook the stupendous task of compiling a systematic and comprehensive treatment of all branches of human knowledge. Louis IX helped him in procuring many of the works necessary for this task. The general title of Vincent's encyclopedia is 'Speculum Majus.' The first part, 'Speculum Naturale,' contains 32 books and 3,718 chapters; it treats of cosmography, physiology, psychology, physics, theology, botany, zoology, mineralogy, agriculture. There is an edition of this work in the Wheeler collection in the library of the American Institute of Electrical Engineers. It comprises two royal folio volumes, containing 694 double-column pages of 66 lines to the column. It was probably published about 1468 and at Strassburg. The second part of Vincent's great work is the 'Speculum Doctrinale,' in 17 books and 2,374 chapters. It deals with logic, poetry,

rhetoric, astronomy, geometry, education, industrial and mechanical arts, anatomy, surgery, medicine, jurisprudence, etc. The third division is the 'Speculum Historiale' in 31 books and 3,793 chapters and brings the history of the world down to 1250 A.D. A fourth part, the 'Speculum Morale,' was included in early editions but its authenticity is questioned. The 'Speculum Majus' contains in all 80 books, divided into 9,885 chapters. It has been calculated that it would be equal to 60 volumes, octavo, of our time, which gives some idea of the magnitude of the work undertaken by this Dominican in the early 13th century. More than five centuries were destined to pass before the encyclopedic idea was again formulated and then it required a brilliant group to perform what Vincent had accomplished single-handed. Other works of Vincent are 'De eruditione filicorum regalium' and 'Tractatus consolatorius de morte amice.' The best edition of Vincent's work is that edited by the priests of the Society of Jesus (4 vols., Douai 1624). Consult Bourgeat, J. B., 'Etudes sur Vincent de Beauvais, théologian, philosopher, encyclopédiste' (Paris 1856); Boutaric, E., 'Examen des sources du speculum historiale de Vincent de Beauvais' (Paris 1863); *Revue des questions historiques* (Vol. XVII, Paris 1875); Daunon, 'Continuation de histoire litteraire de France'; Hauréau, B., 'Notices . . . de MSS. latins de la Bibliothèque Nationale' (Vol. V, ib. 1892); Mâle, E., 'L'art religieux du XIIIe siècle en France'; Fouron, 'Histoire des hommes illustres de l'ordre de Saint Dominique' (Paris 1875); Wattenbach, W., 'Deutschlands, Geschichtsquellen' (Vol. II, 1894).

VINCENT DE PAUL, Fr. văn-sôn dẽ pōl, **Saint,** founder of the Priests of the Mission: b. Pouay, Gascony, 1576; d. Paris, 27 Sept. 1660. Some of his early years were spent on the slopes of the Pyrenees tending his father's scanty flock; but as the boy exhibited signs of remarkable promise he was sent to be educated first at Dax and then at Toulouse. There he completed his ecclesiastical studies and was ordained priest in 1600. In 1605, while on a voyage from Marseilles to Narbonne, he was captured by Turkish pirates and sent to Tunis, where he was in slavery for two years under three different masters, the last of whom, a renegade from Nice, he reconverted to Christianity and induced to escape with him to France. They reached Aigues-Mortes in a little skiff 28 June 1607. The next year Vincent spent in Rome, where he secured the friendship of Cardinal d'Ossat, who sent him to Paris on a secret mission to Henry IV and who afterward procured his nomination to the Abbey of Saint Leonard de Chaume, in the diocese of Rochelle. The founder of the Oratory, M. de Berulle, induced Vincent to take charge of the parish of Clichy, near Paris, but in 1612 he entered the services of the Gondi family. With the assistance of Mme. de Gondi he began giving missions on her estate. Leaving the family for a brief interval he returned to them in 1617. Several parish priests joined him in giving his peasant missions and after each mission a conference of charity was founded for the relief of the poor. Vincent was also deeply interested in the convicts of the galleys, whose moral state was only on a par with their frightful physical misery. Vincent began visiting the galley convicts of Paris and performed for them every manner of service however repulsive. He thus won their hearts and also succeeded in interesting other persons in their behalf. With funds he collected he managed to purchase a home and establish a hospital. Louis XIII made Vincent royal almoner of the galleys and the latter now visited Marseilles where the condition of the convicts was equally as miserable as at Paris. Missions to the convicts at Marseilles and at Bordeaux were crowned with great success. The good wrought everywhere by his missions decided Vincent to found a religious institute of priests who would maintain the work of the missions. Thus was founded the Congregation of Priests of the Mission. At Beauvais, in September 1628, Vincent began the first of his conferences and instructions to candidates for holy orders. These conferences, at first of short duration, were soon extended to two or three years and gave rise to the seminaries, as these prevailed later in France. About the same time Vincent founded the Daughters of Charity. They were intended at first to assist the conferences of charity, to distribute alms and to visit the poor. When their number increased he grouped them into a community under the direction of Mlle. Legras. He also secured for the poor the services of the Ladies of Charity, composed of pious women who nursed the sick poor entering the Hôtel-Dieu to the number of about 25,000 annually. They also visited the prisons. Many of their numbers were of the highest rank in society. Due to them Vincent was able to collect large sums for the benefit of the poor and unfortunate. The care of foundlings was the chief new work made possible by the liberality of the Ladies of Charity. Foundlings at that time were deliberately maimed by persons who exploited them later for their own profit. A special house and four nurses were secured and within two years 4,000 foundlings were housed there at a cost of $150,000. A generous friend placed at Vincent's disposal the sum of 10,000 livres ($50,000), with which the latter founded the Hospice of the Name of Jesus, where about 40 old people of both sexes were cared for. This generous donation stimulated others and soon all the poor of Paris were adequately provided for by the establishment of the general hospital on the lands of the Salpétrière. About $1,000,000 was donated to this end and the king granted the land. The administration was committed to the Daughters of Charity and the greatest humanitarian work of the 17th century was accomplished. Many districts of the provinces far removed from Paris were devastated by the Thirty Years' War. Vincent sent help to the stricken people of these regions and when his treasury at last was empty he decided to print and sell the accounts sent him of the devastation of these regions. This plan was successful and resulted in the periodical called *le Magasin Charitable.* In the ruined provinces Vincent founded the work of the *potages économiques,* the tradition of which has survived to our day in the modern economic kitchen. Societies were founded to clean away the dirt which was a permanent cause of plague. Seeds were distributed to the peasants to aid them in restoring value to their land after the storm of war had passed. Young women were removed from the dangers of the

military zones and sheltered in various convents. After the peace Vincent directed his alms to the Irish and English Catholics whom persecution had driven from their country. All this charitable work had made Vincent's name a household word in France. Indeed, his work finds no parallel until we consider the humanitarian work performed in France and Belgium during the late war and then we have several powerful organizations working to the same end; which makes the work of Vincent stand out as most remarkable, since practically all details of organization and administration devolved on him alone. He was well received at court, but never used his influence save for the welfare of the poor and needy. During the Wars of the Fronde he approached the leaders in an effort to bring about peace, and failing in this, redoubled his efforts to lessen the miseries of the strife at Paris. Soup was distributed daily through his care to over 15,000 refugees, while about 900 young women were removed from the perils of the streets. Vincent's charity was not confined within the boundaries of France. In 1638 he sent priests to preach to the peasants of Italy; others were dispatched to Ireland, Scotland, Poland and Madagascar; but perhaps the work abroad which most interested him was that inaugurated among the Christian slaves of Barbary, whose hard lot he had once shared. These poor Christians, carried off by Turkish pirates, numbered about 25,000. They were treated with less consideration by their masters than beasts of burden. Vincent sent them a priest and a lay brother as early as 1645. Others followed. These missionaries did much to ameliorate the hard lot of these slaves and were able to free some of them. For others they acted as agents with their families. At the time of Vincent's death 1,200 had been ransomed through his efforts and he had expended about $5,000,000 in their behalf. At his death the poor of France lost their best friend and humanity a Christian benefactor unequalled in modern days. On 13 Aug. 1729 Vincent was declared blessed by Benedict XIII and on 16 June 1737 was canonized by Clement XII. He was declared patron of the Sisters of Charity in 1885 by Leo XIII. Saint Vincent's festal day is 19 July. Consult the lives by Abelly (Paris 1664; last ed., ib. 1891); Adderley (London 1901); Collet (Nancy 1748); Chantelouze (Paris 1860); Boyle (New York 1909); De Broglie (ib. 1899); Bougaud (ib. 1908). Consult also Coste, 'A quelle date Saint Vincent de Paul est-il né' (in *Revue de Gascogne* 1911); id., 'Saint Vincent de Paul a-t-il pris à Marseille les fers d'un forçat?' (ib. 1910); Degert, Antoine, 'Histoire des séminaires Français' (Vols. I, II, Paris 1912); Lorti, 'Saint Vincent de Paul et sa mission sociale' (ib. 1880); Maynard, 'Saint Vincent de Paul, sa vie, son temps' (ib. 1850–74).

VINCENTIAN CONGREGATION, named from its founder, the Roman Catholic saint, Vincent de Paul; an association of secular priests, who, though not forming in the strict sense a religious order, are bound by vows, and are especially devoted to the duty of preaching and hearing confessions among the people, particularly the poor. Another object of the Vincentian Congregation is the direction of episcopal seminaries and other colleges for education of ecclesiastics, as also to direct the annual devotional exercises of the secular clergy, called the Ecclesiastical Retreat. (See VINCENT DE PAUL, SAINT). At a somewhat recent enumeration the Vincentian Congregation numbered more than 700 members in France, Italy, Poland, the Levant and Algeria. The members are numerous also in the United States, and branches exist in Ireland and Scotland. The name Vincentian is given sometimes also to the sisterhoods (of which there are several, and of which that of Charity is the most remarkable), which were founded by Saint Vincent de Paul, and even to the Charitable Lay Association, better known as the Society of Saint Vincent de Paul, which has extensive ramifications in almost all the countries in communion with the Church of Rome, and which has been the occasion of some restrictive measures in France.

VINCENTIAN FRIARS. See LAZARISTS.

VINCETOXICUM, a genus of American vines, belonging to the milk-weed family. They have usually cordate leaves and rather large, white or purple-tinted, five-merous flowers with a cup-shaped crown, in axillary umbel-like fascicles. The United States species are found chiefly in the South. *V. shortii* has the odor of the strawberry shrub. *Cynanthus acuminatum,* with star-shaped, creamy flowers, called mosquito-catcher, because it secretes a viscid substance on which insects become fixed, was formerly placed in this genus. Vincetoxicum is the officinal name of the swallow-wort.

VINCI, vēn'chē, **Leonardo da,** Italian painter and sculptor: b. Vinci, Tuscany, 1452; d. Castle Cloux, France, 1519. He was the illegitimate son of Piero da Vinci, a prominent notary of Florence, and a woman of the lower class. By his father he was turned over to his grandparents at Vinci, who seem to have taken a great interest in him and to have attended to his education. When he grew older his father took him to his own house and there he lived with the other children, apparently on an equality with them and received, with them, an excellent education. He proved a good student and gradually developed an ardent desire for knowledge of every kind. But he was not a bookworm. His wonderfully keen intellect enabled him to acquire information with very little effort; and his remarkable musical and social gifts made him one of the most popular young men in Florence, then the intellectual centre of Italy and the peculiar home of art. There was nothing more natural, given his remarkable talents in so many directions, than that he should have learned to paint, an art which was then taught to children as music is to-day. Among his first teachers was Andrea de Verrocchio. Little is known about his early studies in painting and sculpture, at which he seems to have worked with as much earnest endeavor and interest as at his studies in the natural sciences, in the latter of which he excelled all his companions. At the age of 20 he became a member of the Painter's Guild of Florence, then one of the most notable organizations of the age. The dates and facts concerning his early work are as few and as doubtful as the information respecting his youthful studies. It is certain that he was already a master painter in 1478 and that he was then employing others in the business of producing pictures. Much legend and tradition

have collected about this period of his career and numerous existing pictures, some of them completed and others unfinished, and others of them parts of larger works, have been attributed to him without sufficient evidence of a really trustworthy character. It is known that on this latter date he was requested by the Signorina of Florence to paint a certain picture for the Saint Bernard Chapel, in the Public Palace, but what this picture was or whether any of those put forward as it are really the picture in question, or his work at all, is very doubtful. That Da Vinci had advanced well in his art and made the most of his social talents seems certain for we find him in 1482 acting as the specially commissioned bearer of a present from the famous Lorenzo de'Medici, to another character of the age, now famous in history and tradition, Lodovico il Moro, ruler of Milan. The present itself indicates the favor in which Da Vinci was regarded at court. It was a strangely-constructed, yet beautifully-sounding instrument which the young ambassador had himself invented and upon which he played with great skill and wondrous sweetness. This mission proved one of the most eventful undertakings in his life, since it was destined to connect him most intimately, for over a quarter of a century, with the city of "il Moro." But it seems it was not as a painter that the ruler of Milan valued him, so much as for his talents as an engineer and general manager. While in Milan Da Vinci seems to have been tireless. He was, on all occasions, representative and manager for the duke, and acted as the ducal engineer not only in the city but on that ruler's numerous military expeditions and undertakings; and he appears to have had a higher reputation in his day in this activity of his life than in painting and to have prized it higher himself. Among his other activities, at this period, he planned and constructed the Martesana Canal. He was also one of the most notable figures at the ducal court, where he managed the most billiant state affairs and public functions and festivals with consummate skill. He seems to have been also a sort of director of public works and, in this capacity, to have himself acted as architect of various public buildings. He is said to have had a hand in the construction of the very handsome Milan Cathedral, but what his part was is not known definitely. Notwithstanding all these wide and varied activities, he was carrying on painting on a very extensive scale and employing numerous talented painters to execute his designs or to do the less important parts of paintings which he was executing. About this time he wrote an important work on painting, which showed a wonderful knowledge of the art. This, it is said, was intended as a guide and mentor for his own numerous pupils. Thus occupied with so many and important activities he continued in Milan until the duke was driven out of the city in 1599. After the departure of the duke, Da Vinci went to Venice, where he remained two years, which were devoted mainly to art. Then he returned to Florence, where he seems to have been received with great favor by the Church and the artist fraternity. He secured numerous important commissions from churches and monasteries; and some of the work that he executed in this connection, and the designs he drew for others to paint from created a great impression upon the artists of his days. They were consequently copied and imitated extensively not only in Italy, but a little later on throughout all the Latin countries. One of the most remarkable of these was a Madonna, the design for which was worked over by Da Vinci several times afterward, notably in his famous Madonna and Saint Catharine in the Louvre.

In the midst of his triumphs in art Da Vinci became military engineer to Cesare Borgia (1502), a position which he probably retained for some considerable time, as it enabled him to move about through central Italy, and when occasion required to make visits to other parts of the peninsula, one of which he made the following year to Florence, where he served on artistic commissions and did additional military engineering. It was about this time that he painted the famous 'Mona Lisa' (Louvre), a portrait that has probably been more written about than any other in the world, especially during the second decade of the present century. Da Vinci spent four years on this portrait, and it is said that even then (1503–06) he was not satisfied with it. But notwithstanding his own opinion in the matter, the art judgment of the world is inclined to pronounce it his greatest triumph. About the time of the conclusion of this latter painting Da Vinci was appointed painter to the king (Louis XII). This was perhaps the busiest period in his life. He maintained studios for painting and carried on engineering projects and studies in natural sciences in Florence and Milan, in both of which places he had numerous pupils of surpassing worth who executed his designs for him to supply the incessant demands for his art work from churches and individuals. The art work done by his pupils in Milan was especially notable, and much of it was, at one time, believed to be altogether the work of the master himself. One of the most remarkable canvases of this period is the 'Madonna of the Grotto,' of which two copies exist, one in the Louvre and the other in the National Gallery. Much discussion has taken place as to which of these is the original. It is probable that both are, though many critics pretend to see in the copy in the Louvre the more direct embodiment of Da Vinci's style and peculiar artistic qualities. However, both copies are truly worthy of the master; and if one of them was painted by a hand other than his it must have been some one who was able to enter fully into all his moods and who had worked under him so long as to have completely absorbed his atmosphere. From 1513 to 1515 Da Vinci seems to have resided in Rome, having gone there on the departure of the French; but he returned to Milan in the latter year to take charge of the decorations and festivities attendant upon the entry of the French king, Francis I, who rewarded him by appointing him court painter with an annual allowance of 700 scudi in gold. The king also commissioned him to buy up all his own pictures. This he did, and with them he accompanied the French sovereign to France the following year, where he seems to have remained for the rest of his life, giving his time to the study of art and sciences.

Da Vinci, in a sense, revolutionized the art of painting and drawing. His technique was

masterly and really wonderful for his age. It enabled him to work with the greatest freedom and speed and with a sureness of touch and a mastery of design, of drawing and coloring until his day unknown. His portraits, his figures and his designs were always wonderfully true to life; and they led the artists of his age to seek for a fuller and truer expression of all the manifestations of life. This is perhaps the greatest of the many great qualities of the art expression of Da Vinci. Undoubtedly his studies in the natural sciences and, especially in physiology and anatomy, helped him solve many questions that his predecessors had not been able to; and the perfection of his drawing and the representation of the human and other forms seems to have quickened his already keen sense of coloring and of contrast of light and shade and of the blending of the two. He surpassed all his predecessors in the mastery he attained in the depicting of the mystical, the poetical, the sympathetic and the attractive in the human face. It is said that his several years spent in the painting of 'Mona Lisa' were constant strivings to catch the fleeting manifestations of the secret soul of his attractive and winsome subject. But he was not satisfied with mastering the atmosphere of the human face; he turned his attention to the atmosphere of landscape; and here again he succeeded so well that he was very fond of introducing landscape backgrounds into his pictures and portraits, which he did with telling effect. His strange genius is manifested in the perfect unity, form and artistic sense of the human and the landscape elements in his pictures. They seem to have been made for one another, to have grown up together. Insensibly the Italian artists of his day and of the following generation felt his power and recognized his superior genius; and among his numerous pupils were several who understood him so well that, as we have seen, their work has been frequently taken for his. There was not a great painter in Italy for the generation following his death who did not owe much to him. Not the least of these was Raphael; and among them were also such masters of the graphic art as Fra Bartolommeo and Andrea del Sarto, who in turn influenced hundreds of art students in favor of the High Rennaissance whose great master was Da Vinci.

Da Vinci was an inventor of note, one of the greatest and most successful engineers of his time and perhaps the deepest thinker and most profound investigator into all the known branches of science of his age. In many of his investigations he went far beyond his contemporaries.

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VINE. See VITICULTURE.

VINE IN ART AND SYMBOLISM. The grape vine (*vitis vinifera*) figures frequently as a symbol from far distant times. In the Greek mythology Dionysius (and with the Romans Bacchus) was god of the vintage and, therefore, a grape vine with bunches of the fruit are among their attributes. Their attendants on the Bacchanalian festivals — the Bacchanals — hence had the vine as an attribute, together with the thyrsus, the latter often entwined with vine branches. For the same reason the Greek wine-cup (*cantharos*) is commonly decorated with the vine and grapes; wine, of course, being drunk as a libation to the god. In Christian iconography the vine also frequently enters. It is several times mentioned in the New Testament. We have the parable of the kingdom of heaven likened to the father starting to engage laborers for his vineyard. The vine is used as symbol of Christ based on his own statement, "I am the vine." In that sense a vine is placed as sole symbol on the tomb of the sister of Constantine, the Empress Constantia, and elsewhere. In Byzantine art the vine and grapes figure in early mosaics and on the throne of Maximien at Ravenna it is used as a decoration. The vine as symbol of the chosen people is employed several times in the Old Testament. The vine and wheat-ear have been frequently used as symbol of the blood and flesh of Christ, hence figuring as symbols (bread and wine) of the Eucharist and are found depicted on ostensories. Often the symbolic vine laden with grapes is found in ecclesiastical decorations with animals biting at the grapes. At times the vine is used as symbol of temporal blessing. In decorative art, while the vine is not as favored as many other motifs it is frequently found in works of the Middle Ages, and in the Renaissance we find the vine as ornament on friezes, pilasters, etc. Its supple branches, the beauty of the leaf and the artistic formation of the bunch of grapes, all tend to make the plant one whose characteristics we would expect to find more

favor in the modern art world, more especially as the grape bunch is so prolifically used in the decorative arts.

CLEMENT W. COUMBE.

VINE-PESTS. See GRAPE INSECT-PESTS.

VINEGAR is a liquor containing the acetic acid obtained by the acetous fermentation or oxidation of alcoholic liquids — hard cider, wine, beer, malt infusion, beet-root juice, fermenting molasses, dilute spirits or the like. Its color, varying from a pale yellow to a deep brownish red, and its odor and taste are influenced to a large extent by the materials employed in its manufacture. Vinegar obtained by acetous fermentation possesses different properties from pure acetic acid because it contains besides acetic acid and water — the essential constituents of vinegar — also small quantities of substances, which being analogous to those occurring in wine may properly be termed bouquet bodies. These substances give the vinegar an agreeable odor and taste entirely lacking in synthetic vinegar prepared from commercial acetic acid. Even if an agreeable odor is obtained in the latter by the addition of certain volatile oils and compound ethers, the harmonious bouquet peculiar to vinegar obtained by acetous fermentation is never realized, the relation being homologous to that existing between artificial and genuine wine. Any one gifted with a delicate and practised sense of smell can at once distinguish acetic acid vinegar from wine, malt or fruit vinegar.

Vinegar obtained by the acetification of wine has been known from the very earliest times, being used in this form contemporaneously with wine. Many noted scientists, such as Stahl, Davy, Berzelius, Naegeli, Liebig and Pasteur studied the process of acetous fermentation, and in 1822 Doebereiner suggested that acetification is due to the action of oxygen on alcohol, which is converted into acetic acid and water; Liebig sought to clarify this theory, and maintained that by the exposure, under suitable conditions, of alcohol to the action of oxygen one-third of the entire hydrogen contained is withdrawn and aldehyde formed, which latter, however, immediately combines further with oxygen and is converted into acetic acid; the formation of vinegar from alcohol, therefore, being a partial process of combustion. Acetification is, however, a far more complicated process than Liebig supposed and later investigations have shown it to be a chemico-physiological process with the co-operation of a living vegetable organism. It has been shown by Buchner and Weissenheimer that the acetous fermentation is due to enzymas existing in the plant cell. The presence of alcohol and oxygen alone will not suffice for acetification, the presence of nitrogenous bodies and certain mineral salts are absolutely necessary. Pasteur was the first to consider the formation of vinegar from alcohol as a peculiar process of fermentation, maintaining that a certain organism which he termed *Mycoderma aceti*, the "vinegar ferment" or "vinegar yeast" (popularly known as "mother" of vinegar), consumes the alcohol, the nitrogenous substances and the salts; on the other hand Naegeli asserts that this organism rather decomposes the particles of the substance to be fermented into simpler compounds. This organism, of which there are several different kinds, consists of a single cell, its special characteristic being its manner of reproduction, which is effected by a division of the cell into two and then a separation or splitting of both. The cells form chains, which at 104° F. readily grow into long threads (involution forms). It is interesting to note that this organism not only oxidizes alcohol into acetic acid, but will also oxidize the latter into carbonic acid and water, in case alcohol is lacking. This is an important factor in storing vinegar, as if it is allowed to come in contact with air the strength of the vinegar is lessened, owing to the consumption of acetic acid by the ferment.

Vinegar may be made according to the old slow process or by the newer quick process. The principle embodied in the old process is to allow wine, which is unfit for consumption as such, beer, malt-infusion, etc., to oxidize and to draw off the vinegar formed. We may say that this slow process is an adaptation of the spontaneous souring of beer, wine or fermented liquors in general but under such conditions as tend toward an improvement of the product. While this process is employed especially for the preparation of wine vinegar it can nevertheless be used just as well for making malt or fruit vinegars. In this process old oak vats or casks are thoroughly cleansed with boiling water and saturated with strong boiling vinegar, whereupon the vats are filled two-thirds with the mixture of alcohol and vinegar. It is essential that the liquid contain no more than 14 per cent of alcohol, as the vinegar ferment perishes in the presence of more alcohol; a content of not less than 3 per cent of vinegar, while not absolutely necessary, is nevertheless beneficial as it hastens the acetification. This alcoholic liquid is technically termed the "wash." The temperature is maintained as nearly as possible at 76° F., and in a few days the acetous fermentation will have begun, which is then allowed to continue until completed, which requires from 12 to 16 weeks. The vinegar is then drawn off and stored in a cool place in barrels which are filled to the bung hole and closed air-tight, in order to prevent the vinegar ferment from gaining oxygen from the air with which to oxidize the acetic acid and thus weaken the vinegar. Before storing, however, the vinegar is commonly passed through a "rape" or fining vat, having a layer of the residue cake from wine factories — the stems and skins of the pressed grapes. Through this it is passed again and again until every trace of alcohol has been oxidized. Another way is to draw off the vinegar every week as it is formed and to add as much fresh "wash" as vinegar is drawn off. The process is practically continuous and need only be interrupted after several years, when the accumulation of tartar and sediment renders a cleansing absolutely necessary.

Wine vinegar made according to this process obtains its peculiar bouquet from the wine employed and contains besides all the substances of the wine either unchanged or only partly transformed, some new ones, as acetic ether and other compound ethers. In a similar manner malt and fruit vinegar may be made. The former contains the extractive substances of the malt, as, for example, dextrin, nitrogenous bodies, phosphates, etc., and the latter contains also malic acid. A very pure vinegar which

contains only a little acetic ether is made from a mixture of dilute spirits, some vinegar and a malt-infusion.

Schuetzenbach, perceiving that if the relative surfaces of contact of the alcoholic liquid with air be greatly enlarged the formation of vinegar would be accelerated, in 1823 invented what is termed the "new" or "quick process." Almost at the same time in England Ham, and Wagman in Germany, brought out similar propositions. By spreading the liquid over as much space as possible and allowing it to percolate slowly through and diffuse over a mass of shavings, mostly of beechwood (or similar material), a thin layer, presenting a large surface, is formed, one gallon being spread out over 100 square yards. This arrangement favors the chemical appropriation of the oxygen in the current of air caused to pass through the shavings, which not only serves to divide the liquid but also to carry the vinegar ferment, thus hastening acetification. The shavings are first "soured" by soaking in strong vinegar for 24 hours. Cleansed charcoal in pieces the size of a walnut is better even than shavings.

In this process the generator, which is technically termed a "graduator," consists of a large vessel divided into three superimposed compartments of which the uppermost serves to divide the alcoholic liquid into many fine drops; in the middle compartment, which is the largest, acetification takes place, and the lower one is a reservoir for the vinegar formed. This apparatus is built in various forms but the most practical is that of a truncated cone, as the alcoholic liquid in its descent can spread over a constantly increasing area, and continually comes in contact with fresh air, entering from below. Fir or other durable wood, except oak, which contains too many extractive substances, is used. All metallic parts (hoops, etc.) must be well varnished, as heavy rusting will otherwise be caused by the vapors of the acetic acid. Various sizes have been tried, but a generator which is about 10 feet high, and three and four feet in upper and lower diameter respectively, has been found the best. A well-fitting cover in which holes are bored closes the top. The current of air is regulated by opening or closing some of these holes, as may be necessary. The alcoholic liquid is generally introduced through a rotary sprayer. A thermometer is of course a necessary adjunct. The liquid used in this process is usually a mixture containing four and one-half gallons of 42 per cent brandy, nine gallons of old vinegar and 27 gallons of water containing some bran and crushed rye.

Dr. Bersch of Vienna recently invented the automatic plate generator which is so arranged that a formation of aldehyde and the destruction of acetic acid already formed is impossible and that the evaporation of alcohol is almost wholly eliminated. By means of thin plates of beechwood he is enabled to have the alcoholic liquid and the air in undisturbed continual contact, so that vinegar is formed all the time. His generator has the shape of a prism eight feet high, having a base three feet square; the interior is fitted with 10 layers of very thin beechwood arranged in such a way that the liquid can descend on both sides of the plates, while the air ascends between them undisturbed. Once acetification is induced it can be maintained for years, providing of course the influx of the alcoholic liquid and the admission of air are properly regulated.

Theoretically 100 grams of alcohol will produce 130 grams of acetic acid and will require 300 grams of oxygen to oxidize the alcohol, but in actual practice the yield is less, the losses being in general due to evaporation of alcohol, caused either by imperfect apparatus, or by too rapid oxidation. In general such losses average 15 to 20 per cent, although they sometimes amount to 30 per cent. While it is true that rapid oxidation will produce vinegar quickly, yet it is also true that in such rapid oxidation too much of the alcohol evaporates and is not oxidized, so that what is gained in time is lost in material, which is the more expensive of the two. The fact that air which has passed a generator still contains three-fourths of its oxygen shows that four times the calculated amount of air is necessary in order to fully convert the alcohol into acetic acid. Inasmuch as the formation of vinegar is a process of combustion, it is self-evident that heat is developed. This fact must always be borne in mind by the vinegar manufacturer, because the vitality of the vinegar ferment depends upon the temperatures to which it is exposed. Its activity is greatest between 68 and 95° F. (20 to 35° C); if this limit is passed the formation of vinegar decreases rapidly, while at 104° F. (40° C.) it ceases altogether, and 122° F. (50° C.) the ferment perishes. Lower temperatures do not affect the ferment as much as higher temperatures do, but a change from one to the other is not beneficial for the development of the ferment.

Wood vinegar made by the distillation of wood is used to a large extent for the manufacture of various acetates, esters, etc., and in dilution is sometimes used as vinegar for household and preserving purposes, which practice is, however, not advisable, as such vinegar is injurious to health on account of the numerous secondary ingredients contained in the pyroligneous acid (q.v.). The use of such vinegar in food is forbidden by law in some States.

In the household certain precautionary measures are to be followed in the use of vinegar. Vinegar, or foods prepared in vinegar, should never be allowed to stand long in copper, brass or tin vessels; even the enamel of iron and the glazing on earthenware vessels sometimes contain lead, which forms lead acetate in connection with the vinegar. Glass or porcelain vessels are best adapted for this purpose.

VINEGAR BIBLE, a Bible printed in 1717 at the Clarendon Press, in Oxford. So named because in the running headline of Luke xxii, vineyard was misprinted vinegar.

VINEGAR HILL, Ireland, an elevation 389 feet high, close to the town of Enniscorthy, in County Wexford, scene of the defeat of the Irish by General Lake, 21 June 1798. The Irish had camped here for about a month, and discredited their cause by outrages on the lives and property of the loyalists in the surrounding country. About 400 of the Irish were cut down, the remainder fled to Wexford, whither Lake marched the day after, killing all whom he found with arms.

VINELAND, N. J., borough in Cumberland County, on the Pennsylvania and the

Central of New Jersey railroads, about 32 miles southeast of Philadelphia. It was founded in 1861 by Charles K. Landis, on a flat sandy soil, and widely advertised as a region suitable for small fruit farms. It was settled mainly by New Englanders, who mostly lost their investments. In time by heavy fertilization small fruit farming was established, and manufacturing followed. The chief lines are shoe factories, sash, door and blind factories, pearl button works, glass works (in which are made flint and plate glass) and a paper box factory. Squabs are raised on a large scale. The grape juice manufacture is widely known. Other manufactures are thermometers, chenille curtains, rugs and men's clothing. There are three banks and daily and weekly newspapers. The educational institutions are the State Training School for Feeble-Minded Children, a high school, graded schools, the Vineland Free Public Library and the library of the Historical and Antiquarian Society. There are here also the State Home for Disabled Soldiers and the State Institution for Feeble-Minded Women. The borough has the commission form of government, and owns and operates the electric-light plant and the waterworks. Pop. about 5,282.

VINES, Richard, English colonist in America: b. near Bideford, Devonshire, 1585; d. Barbados, 19 April 1651. Educated in medicine, he was sent out in 1609 to explore Maine, then became agent to Sir Ferdinando Gorges (q.v.), and, having returned to New England, passed a winter, probably that of 1616–17, at Winter Harbor, near the Saco. Some doubt is said to be cast on the authenticity of his signature to a deed containing a patent to himself and a certain John Oldham for lands now occupied by Biddeford, Me., and executed in 1629, by the fact that in that year he was in England. Until 1635 he was principal superintendent of Saco, and then he was made councillor. In 1643 he again became administrator of the government of the colony. Some trouble arose in 1644 between him and George Cleaves, who had been sent out by Alexander Rigby to take possession of and administer a territory covered by what was known as the Lygonia or Plough patent and conflicting with the grant made to Gorges. Cleaves sent a messenger to Saco suggesting that the matter be left to the arbitration of the Massachusetts magistrates. Vines refused, and went to Boston to represent his case. The controversy came to nothing at the time. Vines returned to England in 1645, and went thence to Barbadoes, where he became a planter and also practised his profession.

VINES, Richard, English Puritan divine: b. Blaston, Leicestershire, about 1600; d. London, 4 Feb. 1656. Educated at Magdalene College, Cambridge, he was instituted to the rectory of Weddington, Warwickshire, 11 March 1628, and in 1630 to that of Caldecote also. He gained considerable fame as a preacher, and his first sermon before the Commons (30 Nov. 1642) increased it. In 1643 he was placed in the rectory of Saint Clement Dane's, and in 1644 made master of Pembroke Hall, Cambridge. He resigned Saint Clement Dane's on presentation to the rectory of Watton, Hertfordshire. At the Westminster Assembly he was a member of the committee for drafting a confession of faith (1645). In 1649 he refused allegiance to a government without a king or House of Lords, and was thereupon removed from Pembroke and the rectory of Watton. From 1650 he was minister of Saint Lawrence Jewry, London. He was styled the "English Luther," was greatly learned and favored a modified episcopacy. He published some individual sermons and others were posthumously collected in such volumes as 'Πειθαρχί, Obedience to Magistrates' (1656), and 'A Treatise on the Institution of the Lord's Supper' (1657).

VINET, vē-nā, **Alexandre Rodolphe,** Swiss theologian: b. Orchy, near Lausanne, 17 June 1797; d. Clarens, Switzerland, 4 May 1847. He studied for the Protestant ministry in which he was ordained in 1819, having previously been appointed, when only 20, professor of French language and literature at the gymnasium of Basel. In 1829 he published his 'Chrestomathie Française,' comprising a valuable survey of French literature. Subsequently he was a prolific contributor to the journal *Le Semeur,* and in 1837 published a selection of essays written for it under the title 'Essais de Philosophie Morale.' In the year last mentioned he accepted the chair of practical theology in the academy at Lausanne, but gave it up in 1845, and seceded from the national church, holding the principle that there should be no connection between church and state. His views on this subject were enforced in his 'Essai sur la Manifestation des Convictions Religieuses, et sur la Separation de l'Église et de l'Etat' (1842). As a preacher Vinet was noted for eloquence and earnestness, qualities which also form the distinguishing characteristics of his writings. In addition to those already referred to may be mentioned his 'Discours sur quelques Subjets Religieux' and 'Nouveaux Discours,' selections from both of which have been published in English, under the title of 'Vital Christianity'; 'Études Évangéliques' and 'Nouvelles Études Évangéliques,' translated into English as 'Gospel Studies.' His 'Histoire de la Littérature Française au XVIII Siècle'; and 'Études sur la Littérature Française XIX Siécle' display considerable critical insight.

VINEYARD (vĭn'yard) **SOUND,** a passage separating Martha's Vineyard (q.v.) from the Elizabeth Islands (q.v.), near the southeast coast of Massachusetts. It is about 22 miles long and from three to six miles wide. There is one lighthouse where Vineyard Sound opens into Nantucket Sound and one about midway and off the coast of Elizabeth Islands.

VINGT-ET-UN, văn̄t-ā-ŭn̄, a card game played with a whole pack and with any number of players. The cards count according to the number of pips (or spots), the face cards counting 10 and the ace 1 or 11 as the holder chooses. The object of the game is to obtain a hand the total value of which equals 21 (hence the name). Two cards are dealt to each player, and if no one has a hand equal to 21, on the first deal, the players have the right of drawing cards in turn; if the cards drawn bring the total to more than 21 the player is out of the game. The player first obtaining a hand of 21 takes the pool or any other winning determined upon.

VINLAND, or **WINELAND,** the chief settlement of the early Norsemen in North

America, represented in modern times by part of Massachusetts and Rhode Island. The first voyager to see the north coast was Bjarne Herjulfson, who was driven thither by a storm in the summer of 986 A.D., when making a voyage from Iceland to Greenland, of which country his father, Herjulf, and Eric the Red, were the earliest colonists. But Bjarne did not touch the land, which was first visited by Leif the Lucky, a son of Eric the Red, about 1000 A.D. One part of the country he named Helluland, «Stoneland»; another Markland, «Woodland,» the modern Newfoundland and Nova Scotia. A German in his company having found the grape (most probably the *Vitus vulpina*) growing wild, as in his native country, Leif called the region Vinland. The natives from their dwarfish size they called skraelings. Two years after Leif's brother, Thorwald, arrived, and in the summer of 1003 led an expedition along the coast of New England south, but was killed in the year following in an encounter with the natives. The most famous of the Norse explorers, however, was Thorfinn Karlsefne, an Icelander, who had married Gudrid, widow of Thorstein, a son of Eric the Red, and who in 1007 sailed from Greenland to Vinland with a crew of 160 men, where he remained for three years, and then returned, after which no further attempts at colonization were made. Rafn, in his 'Antiquitates Americanæ,' published the first full collection of the evidence which proves the pre-Columbian colonization of America. Both he and Finn Magnusen labor to show that Columbus derived his first hints of a new world from the accounts of these old Icelandic expeditions. Finn Magnusen is believed to have established the fact that Columbus did visit Iceland in 1477, 15 years before he undertook his expedition across the Atlantic, and so may have heard something of the long-abandoned Vinland. Consult de Costa, 'Pre-Columbian Discovery of America' (1901); Rafn, 'Antiquitates Americanæ' (1837); Reeves, 'Finding of Wineland the Good' (1890); Hovgaard, W., 'Voyages of the Norseman to America' (New York 1914).

VINTON, Alexander Hamilton, American Protestant Episcopal bishop: b. Brooklyn, N. Y., 30 March 1852. He was graduated from Saint Stephen's College, Annandale, N. Y., in 1873, and from the General Theological Seminary in 1876. He studied later at the University of Leipzig, took orders in 1877 and was in charge of the Memorial Church of the Holy Comforter, Philadelphia, 1879–84. He was rector of All Saints' Church, Worcester, Mass., 1884–1902, and was consecrated first bishop of the diocese of western Massachusetts in January 1902.

VINTON, David Hammond, American soldier: b. Providence, R. I., 4 May 1803; d. 21 Feb. 1873. Having graduated at West Point in 1822, he was commissioned to an artillery regiment, but was transferred to the infantry 1823; became chief quartermaster on the staff of General Wool, with rank of major, 1846, and served through the Mexican War. He was chief quartermaster of the Department of Texas 1857–61; and was made prisoner of war in February 1861, when General Twiggs surrendered to the Confederates; was exchanged after six months and thereafter was deputy quartermaster-general of the army till 1866, when he was placed on the retired list. He was brevetted colonel and brigadier-general 1864 for 'faithful and meritorious services.'

VINTON, Francis, American soldier and Protestant Episcopal clergyman, brother of David Hammond Vinton: b. Providence, R. I., 29 Aug. 1809; d. 29 Sept. 1872. After graduation at West Point, he was commissioned lieutenant of artillery in 1830. He served against the Indians in Georgia and Alabama, receiving the thanks of Congress and a land-grant in Indiana. While stationed at Boston, he studied law and was admitted to the bar 1834. He resigned his commission in the army in 1836; studied theology; was ordained deacon 1838, priest 1839, in the Protestant Episcopal Church. He was rector in succession of churches in Providence, R. I. (1840–42), Newport, R. I. (1842–44), Brooklyn, N. Y. (1844–46), New York (1855–72). He declined election to the episcopate of Indiana 1848; was elected professor of ecclesiastical law and polity in the General Theological Seminary, New York, 1869. He published 'Arthur Tremaine, or Annals of Cadet Life'; 'Oration on the Annals of R. I.'; 'Commentary on the General Canon Law.'

VINTON, Francis Laurens, American military officer: b. Fort Preble, Me., 1 June 1835; d. Leadville, Colo., 6 Oct. 1879. He was graduated at West Point in 1856, subsequently studied metallurgy and was graduated at the Imperial School of Mines in Paris. When the Civil War broke out he became a captain in the 16th United States Infantry, and later colonel of the 43d New York Volunteers. He participated in the Peninsular campaign, was wounded at the action before Fredericksburg, promoted brigadier-general of volunteers in March 1863 and was professor of engineering in Columbia College 1864–77.

VINTON, Iowa, city, county-seat of Benton County, on the Red River, and on the Burlington, Cedar Rapids and Northern Railroad, about 30 miles southeast of Waterloo and 22 miles north of Cedar Rapids. It is in an agricultural and stock-raising region. The chief manufacturing establishments are a pearl-button factory, two corn-canning factories (about 1,000 employees during the corn-canning season), flour mill and creameries. There are six churches. The educational institutions are the State College for the Blind, Tillford Academy, public schools and a public library. There are four banks and three newspapers. The government is vested in a mayor and a council of eight members elected biennially. Pop., estimated, 3,996.

VIOL, an ancient musical stringed instrument which is regarded as the precursor of the modern violin. They were played on with a bow, and were usually made with six strings, though specimens are extant with three to seven strings. From these primitive viols were gradually developed the violin (q.v.), viola, violoncello, and all this class of stringed instruments having a sounding box and tension screws, but without frets. Instruments with frets have developed as guitars (q.v.). The modern viol is a shortened term for double bass viol, the largest instrument in a stringed orchestra, having three or four strings and a compass usually of three octaves.

VIOLA, (1) The heroine of Shakespeare's comedy of 'Twelfth Night.' (2) The chief figure in Beaumont and Fletcher's comedy 'The Coxcomb,' first played about 1613.

VIOLA, or ALTO VIOLA, or TENOR VIOLIN, a large kind of violin, to which the part between the second violin and bass is generally assigned. It has four gut strings, the two lower covered with silvered copper wire. They are tuned by fifths, exactly an octave above the violoncello. The music is generally written on the alto clef.

VIOLA DA GAMBA, a bass viol held between the legs of the player; an organ-stop with metal pipe of narrow scale, and ears on the sides of the mouths, giving viol- or string-like quality.

VIOLA D'AMORE, vī-ō'lä dä-mō'rā, an instrument of the viol tribe, which had fallen into disuse, but was revived with a degree of success by Urban at Paris. It had five or seven strings of catgut, placed and played as in other bow-instruments; but below them, and passing underneath the bridge, were five or seven other strings of metal tuned in unison with them, which vibrated sympathetically when the former were played, giving to the music a peculiar resonant character. The compass was at least three octaves and a half. The strings of Urban's viola d'amore were tuned in thirds and fourths.

VIOLACEÆ, vī-ō-lā'sē-ē, natural order of exogenous plants, of which about 300 species are known, natives of temperate and tropical countries, those belonging to the former generally herbaceous, and to the latter generally shrubby. They have simple leaves with persistent stipules. The calyx consists of five persistent sepals, usually elongated at the base; the corolla of five hypogynous petals, unequal in the sub-order Violeæ, and equal in the sub-order Alsodeæ. There are five stamens inserted in a hypogyneous disc; the filaments prolonged beyond the anthers. The ovary is one-celled generally with many ovules; the style single, with an oblique stigma. The fruit is a three-valved capsule with many seeds. The best known species are the Violets (see VIOLET), prized for beauty and fragrance. Emetic and purgative properties prevail in the order; and some South American species, particularly of the genus *Ionidium*, yield valuable medicines. The IPECACUANHA; CUICHUNCHUL. The leaves of the Lobolobo (*Conohoria* or *Alsodeia lobolobo*) are used in Brazil as spinach.

VIOLET, a genus (*Viola*) of mostly perennial herbs of the family *Violaceæ*. The species, of which about 200 have been described, are natives of the northern and southern temperate zones. In North America there are about 80 species distributed as far south as the mountains of Costa Rica. They are all of humble growth, rarely exceeding six inches in height; bear heart-shaped leaves upon usually long stems, and irregular flowers either solitary or two together on axillary peduncles. The capsular fruits contain numerous globular seeds. In some species cleistogamous flowers are borne close to the ground or often beneath it. These flowers are close pollinated in the bud. Of the American species cultivated in gardens only two, *V. palmata* and *V. pedata*, are well known though several others are offered for sale. Of the two mentioned the latter which is known as the bird's-foot violet, is apparently the most promising as a garden plant for improvement. The Australian violet (*V. hederaceæ*) is grown to a small extent in California. The horned violet (*V. cornuta*), also called bedding pansy, has long been popular in gardens for its variously colored long-stemmed flowers which appear in early spring. It is a native of southern Europe. The pansy or heart's-ease (*V. tricolor*) is another well-known European species which has long been popular in gardens. (See PANSY). The most important species, however, is the sweet violet (*V. odorata*). This is a native of western Asia and the Mediterranean region whence it was introduced into cultivation and has given rise to numerous varieties having white and reddish purple as well as variously tinted blue flowers, both single and double. The species is the parent of the popular florists' flower which in the United States ranks third in the list of important commercial flowers. Its season under glass lasts about seven months; that of the rose and carnation, its principal rivals, about nine months. (See FLORICULTURE IN AMERICA).

When violets of ordinary quality will satisfy the needs of the grower the violet plants are not particularly exacting in their demands as to soil, cultivation, etc., but when really choice flowers are required the plants demand considerable skill and attention. It has not inrequently happened that growers who after several years' success with the crop considered themselves experts have been disappointed with their repeated failures to produce good blossoms. Hence he business of growing this plant is steadily gravitating into the hands of specialists. And certain sections of the country are becoming noted for their violet industry. Probably the best known of these violet centres is the district near Poughkeepsie, N. Y.

The plants are propagated by division which may either necessitate their removal from the ground or not. In the former case the old parts are destroyed, in the latter the offshoots or young crowns are separated after becoming well rooted. In each case the little plants are set about four inches apart and transplanted to permanent quarters when well established. Cuttings are also widely used. They are either obtained from well-developed runners or from young unrooted crowns and treated like cuttings of geranium until well rooted and ready for transplanting in soil.

In general, the florists' violet will thrive well in any rich loamy soil, but best results are generally obtained with soil resulting from the decay of thick sod pared from an old blue grass pasture upon sandy but rather heavy loam. This should be prepared the season previous with alternate layers of well-decayed cow manure, and after six or more months' exposure to the weather sliced, when about one and one-half pounds of bone meal should be added to each cubic yard of soil. This soil is then spread on benches or made into solid beds in the greenhouses or frames, the former preferred. The plants are set from 8 to 12 inches asunder in rows 10 to 18 inches apart, according to the size of the variety, the single flowered varieties usually demanding the maximum space. Most

growers agree that plantng in early spring is preferable to other times because the plants become well established, vigorous and strong, whereas if set in late spring or later they do not seem to thrive so well during the hot weather. At all times weeds must be kept out of the beds and except when needed for propagation the runners should be removed so as to divert growth toward flower production. The summer temperature should be kept as low as possible and the winter temperature between 45° and 50° at night with a maximum day temperature of 60°. The beds should be kept moist but not wet at all times and the supply of fresh air abundant. Careful attention to these two details of management is one of the most important means of preventing the so-called plant diseases which sometimes destroy the crops of careless growers.

The above method of growing violets continuously under glass is considered the most satisfactory since the plants are always under complete control. There are, however, other methods which are of more or less importance, such as combining house culture with field culture, the plants being cultivated out of doors until early or mid autumn and then transplanted to the greenhouse. Large quantities are also cultivated in frames either with or without artificial heat, the plants being grown either in the field or in beds which are covered with the frames at the approach of cold weather. This method is most popular where the winter temperature is not very low, as in Virginia and southward. Violets are sometimes grown in pots but this method is considered too expensive for commercial purposes and is also likely to prove unsatisfactory and inconvenient.

Since the violet is esteemed mainly for its fragrance, the flowers should be gathered just before reaching prime condition and placed on sale as soon as possible because the odor is evanescent. A definite knowledge of the demands of the market is also essential since some markets demand bunches of certain sizes or forms and will not handle other sizes or forms profitably. The bunching demands great skill and taste and in the larger establishments is usually done by girls.

Several insects feed upon the violet, the most common being the black fly (*Rhopalosihpum violæ*), the green fly (*Aphis sp.*), gall-fly (*Diplosis violicola*), violet sawfly (*Emphytus canadensis*) and the greenhouse leaf tyer (*Phlyctænia rubigallis*). The red spider (*Tetranychus telarius*), which is not an insect but a mite, also lives upon the foliage. Its visitations may be prevented by due attention to ventilation and humidity of the air. The method of controlling the others seems at present to be hydrocyanic acid gas, but intelligent management is considered more satisfactory. It is preventative rather than remedial. The so-called diseases are most effectively prevented by attention to watering, ventilation and ample space for each plant to grow in.

Consult Galloway, 'Violet Culture' (New York 1900); Bailey, 'Standard Cyclopedia of Horticulture' (New York 1916).

VIOLET FANE. See CURRIE, LADY MARY MONTGOMERIE LAMB SINGLETON.

VIOLET-GREEN SWALLOW. See SWALLOW.

VIOLET MOSS (*Byssus Iolithus*), by some botanists ranked as a lichen, and by others as a fungus. It consists of simple articulated threads, and spreads over the "Violet Stones" (q.v.) in the form of a delicate incrustation, at first reddish brown, but in a more advanced stage, yellowish green. It was formerly in use as a popular remedy for feverish cutaneous eruptions.

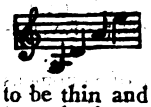
VIOLET STONES, certain stones found on high mountains — as in Thuringia, on the Harz Mountains and the Riesengebirge — which, in consequence of being covered with what is called *Violet Moss,* emit an odor like that of violets. They retain this odor a long time, and it is increased by moistening them.

VIOLIN, a musical instrument consisting of four strings stretched by means of a bridge over a hollow wooden body, and played on with a bow. The principal parts of the violin are the scroll or head in which are placed the pins for tightening and slackening the strings; the *neck,* which connects the scroll with the body and to which the *finger-board* is attached, that is, the board upon which the strings are pressed down or stopped by the fingers of the left hand as it holds the neck in playing; the *belly* or upper surface of the body, over which the strings are stretched, and which has two sound-holes, one on each side in this shape ∫; the *back* or under side; the *sides* or *ribs,* uniting the back and belly and completing the body; the *tail-piece,* a piece of wood of somewhat triangular shape, to the broad end of which the strings are fastened, and which is attached by a piece of catgut to a knob at the opposite end of the body from the head, and so is stretched above the belly; and the *bridge,* rising between the tail-piece and the finger-board, with one of the sound-holes on each side. The back and belly have both a considerable convexity, and the edge of the bridge on which the strings rest is also convex so as to allow of each being touched separately by the bow. Some instruments consist of as many as 58 different pieces, but so minute a division is not necessary. The back, neck and sides are generally of sycamore, the belly of deal, the finger-board and tail-piece of ebony. Almost all the different pieces are fastened together with glue. The strings are of catgut, the lowest or bass-string being covered with silvered copper wire, silver wire or even gold wire.

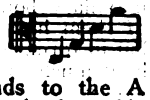
Instruments of the violin kind have been in use from an unknown antiquity. The viola, which preceded the violin in Europe, has been traced back to the 8th century. In several important respects the violin is superior to almost every other instrument, and there is none which combines so many excellencies. Within its range it can take every interval of pitch to the minutest fraction, its susceptibility of division being limited only by the delicacy of manipulation of the performer; so that it can always be played either in just intonation, or in any temperament required by the accompanying instruments. It is thus equally adapted to solo and orchestral performances. For the former it is fitted by its clear and brilliant tone, as variable in volume as in intonation, inexhaustible in continuity and variety of shading,

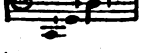
and capable of the sharpest strokes of *staccato* as well as of the most sustained efforts of *legato* music. Its place in the orchestra is marked by these perfections as the leading one, to which the melody is entrusted. As a solo instrument it has also a peculiar faculty of imitation, not only of the tones of other instruments, but of non-musical sounds, as far as they are capable of musical imitation. This and its indefinite range are somewhat liable to abuse.

As an orchestral instrument its powers are multiplied by the making of similar instruments varying in size, but nearly identical in principle and form of construction. The full orchestral set consists of the violin, which is used for first and second parts; the viola, or tenor violin; the violoncello, or bass-violin; and the violone, contra-basso, or double-bass violin, which usually accompanies the violoncello at an octave of interval. The four strings of the violin are tuned at intervals of fifths, thus



The highest range of the instrument depends to some extent upon the performer, but the high notes when forced are apt to be thin and squeaky. Its legitimate compass exceeds three octaves. The violin can, to a limited extent, be made to produce harmony by sounding two or three strings together, but this is only a *tour de force*, not suitable for rendering a sustained composition, although a fugue in four parts for a single violin has been written by Sebastian Bach. The viola is tuned thus, the music being written in the alto clef. Its range extends to the G above the treble clef. The violoncello is tuned thus





Its compass extends to the A above the second line in the treble clef. With the assistance of harmonics it may be carried one or two octaves higher. The double-bass has three, four or five strings.

The structure of the violin while closely imitated is still imperfectly understood by musical mechanists. The finest violins are by old makers, which cannot be rivaled, and the precise cause of their superiority, whether in the wood or the varnish used, has never been satisfactorily explained. The Cremona violins stand in the first rank, the celebrated masters of this school being the Amati, Antonio Stradivari (Straduarius), and Giuseppe Guarneri (Guarnerius); of German makers Stainer or Steiner and Klotz (both belonging to Tyrol) are the most celebrated; Vuillaume of the French; and Forrest of the English. Consult Abele, H., 'The Violin and its Story' (New York 1906); Engel, C., 'Musical Instruments' (London 1875); Hart, G., 'The Violin: Famous Makers and their Imitators' (Boston 1885); Hill, 'Antonio Stradivari' (London 1902); Hipkins, A. J., 'Musical Instruments, Historic, Rare and Unique' (Edinburgh 1887); Morris, W. M., 'British Violin Makers, Classical and Modern' (London 1904).

VIOLLET-LE-DUC, vē-ō-lā-lē-dŭk, **Eugene Emanuel**, French architect and historian: b. Paris, 27 Jan. 1814; d. Lausanne, Switzerland, 17 Sept. 1897. He made special study of mediæval architecture in Italy and France; and became professor in the École des Beaux Arts in 1863. His great work is 'Dictionary of French Architecture from the 11th to the 16th century' (10 vols. 1854–69). His other chief works are 'Essay on the Military Architecture of the Middle Ages' (1854); 'Dictionary of French House Furniture from the Carlovingian Epoch to the Renaissance' (6 vols. 1854–75); 'Discourses on Architecture' (1858–72); 'Chapels of Notre Dame de Paris' (1867–69); 'Memoir on the Defense of Paris' (1872); 'History of a House,' 'History of a Fortress,' 'History of Human Dwelling Places,' 'History of a City Mansion and of a Cathedral' (4 vols. 1873–78). As a practical architect he restored the east towers of Saint Ouen, Rouen, and the cathedral at Carcassonne, besides executing many other works, among the most important of which are the restorations of the chatean of Pierrefonds and the fortifications of Carcassonne. Consult Sauvageot, 'Viollet-le-Duc et son Œuvre (1880); Saint Paul, 'Viollet-le-Duc, ses Travaux d'Art, etc.' (1881).

VIOLONCELLO, vē″ō-lŏn-chĕl′ō or vī″o-lon-sĕl′ō, a powerful and expressive bow instrument of the violin series, held by the performer between the knees, and filling a place between the violin and double-bass. It has four strings, the two lowest covered with silver wire. It is tuned in fifths, C (on the second ledger-line below the bass staff), G, D, A, reckoning upward, and is an octave lower than the viola or tenor violin. Its ordinary compass from C on the second ledger-line below extends to A on the second space of the treble, but soloists frequently play an octave higher. An eight-foot pedal stop on a pipe-organ also bears the name violoncello. Both are frequently abbreviated to 'cello.

VIOMÉNIL, vē-ō-mā-nĕl, **Antoine Charles du Houx**, Baron de, French soldier: b. Vosges, France, 3 Nov. 1728; d. Paris, 9 Nov. 1792. He entered the army at 12, served in Holland and Handover, became brigadier-general in 1762, and commanded a regiment in the Corsican campaign of 1768–69. He was promoted major-general in 1770, served in Poland in aid of the confederation of Bar and captured the castle of Cracow. He was appointed second in command under Rochambeau of the army sent to the aid of the American revolutionists in 1780, won the Grand Cross of the Legion of Honor for his conduct at Yorktown in 1781, and was promoted lieutenant-general. In 1783–89 he was governor of La Rochelle, and while defending Louis XVI, during the attack on the Tuileries in 1792 received injuries from which he died.

VIOTTI, vē-ot′tē, **Giovanni Battista**: eminent Italian violinist and musical composer: b. Fontanetto, in Piedmont, 23 March 1753; d. 10 March 1824. From his father, a veterinary surgeon, he learned the rudiments of music, and received lessons in violin-playing from Giovanni 1764. Two years later he was placed under Pugnani at Turin. After holding for a short time the appointment of first-violinist in the royal chapel at Turin, he relinquished that office, in order to travel in Europe with Pugnani. In Berlin, Saint Petersburg, Paris and London his playing created a *furore*. He visited London first 1792, and was engaged there at Salomon's concerts, and for a time as leader of the orchestra in the King's Theatre. A

groundless charge of being a revolutionary agent drove him from England; but after living for a time in retirement at Hamburg, he returned to London, 1795, where he continued to reside until 1818, when he settled in Paris and resumed direction of the opera there. He retired in 1822 with a pension, but, returning to London, entered into ruinous speculations. He died in London. His compositions include violin concerts and quartettes for violin, tenor and violincello, violin duets and solos, and a few pianoforte compositions. His playing was characterized by a vigor of style and purity, as well as brilliancy and elegance, previously unknown; and he has been considered the father of the modern violin school. Consult Baillot, F., 'Notici sur Viotti' (Paris 1825).

VIPERIDÆ, family of snakes constituting with Crotalidæ, the Viperina, or third sub-order of Ophidia. The general characteristics of viperidæ are wide angular depressed head, causing the neck to appear small in comparison; short, thick body; and tail tapering suddenly to a point. In some of the largest vipers, the short, unmistakable tail is only two inches in length. The head is mostly covered with scales, rarely plates, or only a few about the eyes and lips, or with extremely fine plates. The scales are carinated, often rough, even spincus. The ventral shields are broad, and the subeaudal plates in two rows. The nostrils are large, and in some species they close with a valve. This highly venomous family of serpents are furnished with a pair of long, curved fangs. In this order the upper maxillary, bearing two isolated fangs firmly fixed to it, is reduced to a mere wedge of bone, which is movably articulated, and by especial muscles rotates or rocks to and fro, and the fang with it. The action is volitional as a whole. The viperine snakes are often said to have "movable" fangs, though the fangs themselves do not move independently, but only with the bone to which they are attached. Thus, when at rest, the fang, protected by a membranous sheath, lies supine along the jaw; but when in use springs down by the rotation of the maxillary bone, just as a scythe might point downward or horizontally by the movement of the handle. The fang has a canal in its interior, connected with a poison gland, whose contents are ejected into the wound made by the fang in the act of biting. Behind the pair of functional fangs, others, in a rudimentary stage, are found, and may even create a wound, though, being as yet unconnected with the poison-duct, they do not convey venom into the wound. The lower jaw has numerous solid teeth of the ordinary form. Formerly the vipers were confounded with colubrine snakes, and even at the present day authorities differ in the arrangement of *genera* and *species*, on account of the forms running so much into each other. Dumeril gives six genera and 17 species; Wallace, three genera and 22 species, and Gray nine genera and 20 species. Strauch gives three genera; *Vipera* (with 20 species), *Echis* (with one species), and *Atheris* (with three species). Those of the family best known are the "River Jack" of western Africa, the Horned Viper or Cerastes (q.v.) of northern Africa and western Asia, the Puff Adder of Africa, the Death Adder of Australia, Russell's Viper and the Carpet Snake of India. The cobra de capello and the Egyptian Naja haje also belong here. The viperidæ, as above mentioned, are mostly distinguished by their broad flat, angular head; thick, heavy body; short, tapering tail; rough, carinated scales, and a generally hideous physiognomy, which seems to express their noxious qualities. Nevertheless some have a handsome exterior and are adorned with dark, rich colorings and patterns. The Daboia of India is one of these, and, being of less clumsy form, has been named *Vipera elegans*. The true vipers, or those which have not the nasal fosse, are most largely represented in Africa, which has about 12 species. Europe has three, India two. The anomalous Death Adder (*Acanthophis antarctica*) of northern Australia, with its unmistakably venomous look, is included among the vipers, nowithstanding it has a pair of fixed fangs like the *Elapidæ*. The largest and deadliest species are found in tropical countries. They inhabit dry, sandy deserts, and are of retiring, sluggish nature. See LACHESIS ASP; PUFF-ADDER; RATTLESNAKE, etc.

VIPERS, a family (*Viperidæ*) of venomous snakes belonging to the suborder *Solenoglypha* and closely related to the *Crotalidæ*, or pit-vipers and rattlesnakes. In the character of the poison apparatus the vipers closely resemble the rattlesnakes, under which heading a full description will be found, but they differ as a family from the *Crotalidæ* in lacking the preorbital sensory pit and the excavation of the maxillary bone for its accommodation. None of them have the tail terminated by a rattle; but in form, scale characters and habits they exhibit much the same range of variations as the various genera and species of the pit-vipers. Their distribution, however, is totally different, for while the *Crotalidæ* are scarcely represented outside of America the *Viperidæ* are absolutely confined to the tropical and temperate regions of Europe, Asia and Africa, the latter having the greatest number and most formidable species. The family embraces 40 or 50 species, many of which are variable. The typical vipers are the characteristic poisonous snakes of most of Europe and belong to the genus *Vipera*, which has two rows of scales or urosteges on the short tail, the head covered almost exclusively with numerous small scales, with those at the end of the snout and above the eyes often turned upward, and the body-scales keeled.

The common viper or adder (*Vipera berus*) is found throughout most of temperate Europe, including England and Scotland, but is absent from large areas, while in others of different geological formation and even in well-cultivated districts it is common. It attains a length of from one and one-half to two feet, and is variously colored. Its most frequent and stable markings appear to be a brownish-yellow ground, with a series of continuous zigzag markings along the back, and a set of triangular black spots along each side. Specimens are frequently found with light tints and sometimes nearly black. The viper is the only poisonous reptile of Britain. Its bite is seldom productive of fatal consequences, but may induce pain, sickness, fever and even delirium and as a sequence a protracted period of nervousness and

a tendency for the wound to suppurate. The effects have been known to persist for a fortnight or more; and in children a fatal result has occasionally followed the adder's bite. The food consists of frogs, mice, birds, eggs, and they hunt chiefly at night, quartering the ground systematically and following the runways of meadow mice. The viper is viviparous — retaining its eggs within the body till the young are hatched, and the young are known to habitually retreat into the mouth and œsophagus of the mother when threatened by danger. Like the rattlesnake vipers often collect in large numbers in caves and holes during the season of hibernation.

The common asp of southwestern Europe (*V. aspis*) has the snout plate turned upward, a character which is much exaggerated in the prominent nasal horn of *V. ammodytes*, of southeastern Europe. Supra-orbital horns, recalling those of the horned rattlesnake of the southwestern United States, are found in *Cerastes* and *Clotho*. The former inhabit the hot desert-region of northern Africa and southwestern Asia, one small and very venomous species being the horned viper (*C. cornutus*). The asp used for suicide by Cleopatra, and of Scripture is not a viper, but one of the cobras (*Naja haje*). To *Clotho* belong the large and dangerous rhinoceros-vipers of Africa. One of the most dreaded serpents of Africa is the puff-adder (*Bitis arietans*) which, besides some differences in arrangement of the head-scales including the absence of any horns, has the nostrils directed nearly upward. It reaches a length of five feet, and is of robust build, its apparent size being further enhanced by its habit of puffing up the body when molested. The puff-adder inhabits dry plains throughout the greater part of Africa and like the horned vipers conceals itself by partially covering its body with loose earth. In general habits it resembles the European viper but is more sluggish, and owing to its large size and the virulence of its venom is exceedingly dangerous to man and beast. Its bite is followed by the most severe constitutional and local symptoms, including a rapid and progressive gangrene. In Africa are found also the tree-vipers (*Atheris*), small snakes with prehensile tails and usually bright green colors. Several species of vipers are among the most poisonous snakes of India and contribute largely to the number of fatalities resulting from snake bites in that country. The most notable are Russell's viper or ticpolonga (*Daboia russellii*), reaching a length of five feet, and the little, but for that reason even more dangerous, krait (*Echis carinata*). The name viper is also applied erroneously to several American snakes, especially to the copperhead and moccasin (qq.v.) and to the hog-nosed snake (q.v.), the last of which is quite harmless, notwithstanding its unfortunately had reputation and threatening appearance.

A number of mostly small, poisonous snakes of Africa and India have been separated from the *Viperidæ* under the names *Causidæ* and *Atractaspidæ*. They differ variously in having large head plates, grooved fangs, no postfrontal bone or in being oviparous. The vipers of Australia are related to the cobra de capello (q.v.) and belong to the family *Najidæ*.

Consult Boulenger, 'Catalogue of Snakes of the British Museum' (London 1896); Gunther, 'Reptiles of British India' (London 1864); Boulenger, 'Reptiles of British India' (London 1890); Anderson, 'Zoology of Egypt,' Vol. I (London 1898).

VIPER'S BUGLOSS, plant of the genus *Echium* of the natural order *Boragineæ*; having a calyx with five deep segments, an almost bell-shaped corolla with dilated throat and irregular limb, very long unequal filaments, and a bifid style. The species of this genus are large herbaceous plants or shrubs, rough with tubercles and hairs. Their flowers are often very beautiful. The Common Viper's Bugloss (*E. vulgare*), a large annual plant, is a native of Europe, growing in dry places, frequently in cornfields, and is a troublesome introduced weed in Virginia, but rather rare in the northern States. Its flowers are at first reddish and afterward blue. It derives its name, Viper's Bugloss, from spots on its stem, which somewhat resemble those of the viper — whence the property of healing vipers' bites was ascribed to it. Other herbaceous species are found in southern Europe, North and South America, and other parts of the world. Shrubby species are found chiefly in the Canary Islands and in southern Africa.

VIPER'S GRASS. See SCORZONERA.

VIRCHOW, vĕr'hō, **Rudolf**, German scientist: b. Schivelbein, Prussia, 13 Oct. 1821; d. Berlin, 5 Sept. 1902. He studied medicine in Berlin in 1839–43, and in the latter year became a surgeon's assistant. From 1844 to 1846 he was assistant at the Charité Hospital, and in the latter year he became prosector there. He qualified in 1847 as a lecturer at the University of Berlin, and in that year also he was associated with Benno Reinhardt in founding the 'Archiv für pathologische Anatomie und Physiologie und für klinische Medizin,' world-famous as "Virchow's Archives," which he edited alone from Reinhardt's death in 1852 till his own. He made himself known as a pronounced democrat in the year of revolution, 1848, and his political activity caused the government to remove him (1849) from his prosectorship, but he was soon reinstated, and accepted the chair of pathological anatomy at Würzburg. In 1852 he became joint editor of the Cannstatt reports on the progress of medicine, which he continued in conjunction with others till his death. In 1856 he returned to Berlin as professor of pathological anatomy, general pathology and therapeutics, and director of the recently founded pathological institute. He became a member of the Municipal Council of Berlin in 1859, and began his career as a civic reformer. Elected to the Prussian Diet in 1862, he became leader of the Radical or Progressive party; and in 1880–93 he was a member of the Reichstag. Virchow was a determined opponent of Bismark's policy, and in 1865 was challenged to a duel by the "man of blood and iron." He exercised especial influence in matters relating to public health, and during the wars of 1866 and 1870–71 he took an active part in organizing the army sanitary services. During his membership of 40 years in the Berlin Municipal Council he was active in promoting the sanitary improvement of the city. In 1870 he assisted in founding the

Deutsche und Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte, of which he was several times president and in 1879 he made a journey to the site of Troy, described in 'Beiträge zur Landeskunde in Troas' (1879) and 'Alttrojanische Gräber und Schädel' (1882). He visited England in 1893 and delivered the Croonian lecture to the Royal Society on 'The Place of Pathology in Biological Studies,' receiving on the occasion the honorary degree of D.C.L. from Oxford. In 1898 he delivered the Huxley lecture in London, his subject being 'Recent Advances in Physiology.'

Virchow was the founder of cellular pathology, was scarcely less distinguished in archæology and anthropology and was the author of many important works, among which are 'Handbuch der speciellen Pathologie und Therapie' (1854–76), prepared in collaboration with others; 'Vorlesungen über Cellularpathologie in ihrer Begründung auf physiologischer und pathologischer Gewebelehre' (1859), his chief work, forming in the 4th edition the first volume of 'Vorlesungen über Pathologie' (1862–71); 'Vier Reden über Leben und Kranksein' (1862); 'Ueber den Hungertyphus' (1868); 'Ueber einige Merkmale niederer Menschenrassen am Schädel' (1875); 'Beiträge zur physischen Anthropologie der Deutschen' (1876); 'Die Freiheit der Wissenschaft im Modernen Staat' (1877); 'Gesammelte Abhandlungen aus dem Gebiete der öffentlichen Medizin und der Seuchenlehre' (1879), etc. It was in fulfilment of the desires of Virchow that the German government erected in Berlin the Pathological Institute and Museum, the greatest institution of its kind in the world. Consult his 'Life' by Beecher (1801), and Pagel's 'Rudolph Virchow' (Leipzig 1906).

VIRDEN, vĕr'dĕn, Ill., city in Macoupin County, on the Jacksonville and Saint Louis and the Chicago and Alton railroads, about 22 miles southwest of Springfield and 30 miles southeast of Jacksonville. It is in an agricultural region in which there are large beds of bituminous coal and valuable deposits of clay. The chief manufactures are brick and tile. The principal shipments are farm, coal, clay and dairy products. There are two newspapers and a bank. Pop. about 4,000.

VIRE, France, an ancient town of Normandy, in the Department of Calvados, on the right bank of the Vire, 35 miles southwest of Caen. It stands on a rock, is built of granite and is surrounded by hills, between which are the celebrated valleys of Vire—*Vaux de Vire.* It has an old church dating from the 12th to the 15th century and ruins of a castle of the 12th century. Its industries are cloth and paper-making and cotton and wool spinning. Pop. 7,000.

VIRELAY, vĕr'ĕ-lā (French, *virelai,* from *virer,* to turn; *lai,* a lay): a short poem of two rimes only, common in Old French; also a succession of stanzas on two rimes, the rime of the last line of each stanza becoming the rime of the first couplet in the next.

VIREONIDÆ, family of American oscine passerine birds, of which *Vireo* (q.v.) is the typical genus; the greenlets. The other genera are *Cyclarhis, Hylophilus, Lalcles, Neochloe* and *Vireolanius.* The vireo are all small birds, less than seven inches long and of a greenish color. They are mostly insectivorous and live in woods and shrubberies.

VIREOS, or **GREENLETS,** a family (*Vireonidæ*), of small fly-catching passerine birds, restricted to America, where they range from Patagonia to Canada. They have bills conical, much compressed, decurved at the end and notched, but scarcely toothed, with numerous conspicuous rictal bristles; frontal feathers bristly and erect, or bent slightly forward; nostrils overhung by membrane; 10 primaries; tarsus usually longer than middle toe and claw; lateral toes generally unequal. The vireos are all small, none of them exceeding about seven inches in length and their colors are plain, generally more or less greenish above, with few conspicuous markings beyond wing-bars and eye-stripes. The iris is frequently bright in color, red, yellow or pure white. The vireos are typically woodland birds, many of them preferring well-watered ravines, others swamps, while some inhabit open woods, parks or the trees of city streets. They are migratory and characteristically insectivorous and search for small caterpillars among the leaves or in cracks of the bark or capture insects on the wing, and they exhibit great activity in these pursuits. Some of the species also eat berries, particularly in the fall. Their nests are very characteristic, being deep cups composed of well-felted vegetable fibres lined with fine grasses, often ornamented externally with bits of paper, lichens, etc., attached with spider's web and nearly always pendent from the twigs of a horizontal fork in a low limb. The three or four eggs are pointed, of a crystalline whiteness and spotted with sharply defined reddish-brown markings. Generally the song is weak, monotonous and repeated almost continuously, but some species are excellent songsters.

South and Central America is the headquarters of this family of birds and there the greatest number of generic types and the greatest variety in habits are exhibited, some of the species approaching the shrikes in structure and some exhibiting marked distinctions in the colors of the sexes. All of the 12 North American species, some of which include several subspecies, fall within the typical genus *Vireo.* While the differences in the colors, form of the often stout, shrike-like bill and proportions of the body are evident enough to the initiated, no group of birds is more confusing to the tyro in ornithology, and the reader is referred for descriptions of the species to some standard work on ornithology. The red-eyed vireo (*V. olivaceous*) is generally the best known of the Eastern species. It is strictly a bird of the woods and is noted for its quarrelsomeness, activity and the energy and persistence with which it sings its simple lay continuously as it searches for insects throughout the hottest summer days. The warbling vireo (*V. gilrus*), of still wider range and locally almost as common, is a striking contrast to the last in that it forsakes the woods for the city parks and even the shade trees along much traveled streets and because of the surpassing sweetness of its song which, however, is so soft that it does not always reach the ear from the tree-tops where these birds dwell. A much more conspicuous songster, because of its greater power

and marked ventriloquistic ability, is the white-eyed vireo (*V. noveboracensis*), a species which must be sought in regions sparsely timbered or covered with a scrubby growth or in thickets bordering swamps. The blue-headed vireo (*V. solitarius*) is recognizable as the largest and most stoutly built of North American species, the yellow-throated vireo (*V. flavifrons*), about equal in length but more slender than the blue-head, by its unusually bright colors, while the remaining species are chiefly restricted to the west and southwest.

VIRGIL, vĕr'jĭl (PUBLIUS VIRGILIUS MARO), Roman poet: b. near Mantua in Cisalpine Gaul, 15 Oct. 70 B.C.; d. Brundisium, Italy, 21 Sept. 19 B.C.

The Roman writers differ greatly in the amount of biographical information which they themselves give us, and Virgil forms a marked contrast in this respect to his friend and contemporary, Horace. This is doubtless due in part to the nature of the themes which he treated, but in part also to his natural modesty and shrinking from every form of publicity. Fortunately, however, besides allusions of a casual nature in the works of other Roman writers, three ancient biographies of the poet have come down to us. The best of these is that of Aelius Donatus, of the 4th century, which, though distorted in some particulars, seems to be based upon good sources and to give accurately the main details of Virgil's life.

Virgil was born in the country, in a district called Andes, not far from the modern Pietola, three miles below Mantua on the river Mincio. His father was of humble origin and is said by some to have been a potter, by others the hired laborer of one Magius. He married Magia Polla, the daughter of his employer, and finally became himself the owner of a small estate, from which he made a living by farming and bee-keeping. He prospered sufficiently to be able to give his son a thorough education, at first in the neighboring town of Cremona, and afterward at Naples and Rome. Of these opportunities Virgil took the fullest advantage. He was always a diligent student and like Cicero made a thorough preparation for his life work. At Naples he took up the study of Grecian literature under Parthenius; at Rome he not only applied himself to the regular curriculum of rhetoric and philosophy, but besides studied medicine, mathematics and natural philosophy. He seems to have owed most to the Epicurean Siro, through whom he probably became acquainted with the work of Lucretius, by which he was strongly influenced, as was recognized by the ancient critics. He also acquired a love for philosophical speculation which lasted throughout his life and profoundly affected his literary work. Virgil is said to have suffered constantly from dysepsia and headache and his ill-health, as well as his retiring disposition and studious habits, turned him from the usual political or military career. He held no public office of any sort and in fact spent little time in Rome, finding the milder climate of Campania and Sicily more congenial. He seems to have amassed a comfortable fortune from the liberality of his patrons, for in his later life he owned several country places and a house at Rome, on the Esquiline Hill. He enjoyed the friendship of the most distinguished men of his day, both in the world of letters and in public life. He never married and his name is associated neither by himself nor by others with any affairs of the heart. After the completion of his course of study at Rome, we lose sight of Virgil completely for about 10 years. It seems probable that he retired to his native place and busied himself with the management of his paternal estate and with study. This quiet life was rudely interrupted after the battle of Philippi in 42 B.C. His estate was included in the proscriptions which were made in Cisalpine Gaul for the benefit of the veterans of Antony and Octavian and he is said to have had a narrow escape from death at the hands of one of the soldiers. The details of the affair are confused and uncertain. We know, however, that Virgil went to Rome to appeal for protection, where he made the acquaintance of Mæcenas and of Octavian. He was unable to recover his property, but seems to have been given another estate, perhaps the one which he is known to have owned near Nola in Campania. His visit to the capital had, however, much more important consequences, which influenced his whole future life. He became a member of the literary circle which Mæcenas had gathered about himself, to which he was afterward the means of introducing Horace, and through the generosity of his patron was enabled to devote all his time to literary work and to study. In the year 19 B.C. Virgil undertook a journey to Greece and Asia Minor, with the intention of revising the 'Æneid,' of which he had made a preliminary draft, and then devoting the rest of his life to his favorite philosophical studies. At Athens he met Augustus, who persuaded him to return with him to Italy. Virgil had contracted a fever from exposure to the sun at Megara and was ill when he embarked. He died shortly after landing at Brundisium and was buried near Naples. The exact location of his tomb is a matter of uncertainty.

We know something of the poet's personal appearance from the description of Donatus. According to him Virgil was large of frame and dark complexioned, and had a certain air of rusticity. This description tallies with the authentic portraits which we possess, which form a very small part of the great number which bear his name. The best are two mosaics, one discovered at Trier in 1884, the other at Susa in Africa in 1896. In character he was gentle and lovable and so extremely modest, that he is said to have taken refuge in the nearest shop or doorway to avoid notice.

Although Virgil, like nearly all of the great writers of his nation, was born outside of Rome, he is one of the most patriotic and intensely Roman of all his countrymen. He belongs with Horace to the national school; for, though, unlike his friend, he was strongly influenced by the Alexandrine Greek writers, to whom he was introduced by Parthenius during his studies at Naples, he drew from them only what was best in their work and avoided their defects. He owes to them the cosmopolitan tone which has made him popular with all nations and all ages, and his mastery in the treatment of the passion of love. He is not an Alexandrine in the sense

in which that term is ordinarily used, but like Cicero developed a characteristic style of his own.

The first undoubtedly genuine work of Virgil which has been preserved is a collection of 10 pastoral poems, called variously the 'Eclogues' (*Eclogæ*) and the 'Bucolics' (*Bucolica*). These were probably composed between the years 43 and 37 and are the first Roman representatives of that branch of poetical literature. They were, however, far from being an original creation, but on the contrary are modeled on the 'Idyls' of Theocritus with a closeness of imitation which is rare even among Roman writers. The names of the characters are in most cases taken from the Greek original and the landscape has nothing which suggests the scenes amid which Virgil passed his early life, but is throughout Sicilian; and yet the genius of the poet succeeded in impressing itself on this early work and it has always justly been given a high rank in the history of Roman literature. The 'Eclogues' fall into two distinct classes, each represented by five poems, the purely pastoral pieces, which sing of various phases of the life of the idealized shepherd, especially contests in song, and the allegorical poems, which introduce the poet himself and his contemporaries in the guise of shepherds. The latter are naturally the more original and they are also by far the more difficult of interpretation. The most widely known of all is probably the 4th Eclogue, which celebrates the birth of a child, about whose identity there is a difference of opinion, who is to bring back the Golden Age to Italy. It owes its renown in a great measure to the belief, which became current in the Middle Ages, that it was a prophecy of the coming of the Messiah.

Virgil's next work dealt also with the country life with which he was so familiar and loved so much. Mæcenas and Augustus are said to have suggested to him the writing of a poem on agriculture, in the hope of making farm life more attractive to the people of Italy, but the poet must have required little urging to induce him to take up a subject so congenial. He had an abundance of material at hand to draw on among the Greek writers and the topic had been a favorite one with the Romans as well, though it had not as yet been treated in verse. Virgil expressly acknowledges his obligations to Hesiod, but he owes more to the Alexandrine writers Nicander and Aratus. In four books he writes of the management of fields, the growing of trees, the rearing of horses and cattle and bee-keeping. He avoids with great skill the dryness of a didactic work by the introduction of such digressions as the praise of spring and by a general lightness of touch which gives an attractive form even to the most commonplace details. He composed slowly and with loving care and polished his language and versification to the highest degree of refinement. The 'Georgics' have justly been called the most finished poems in the Latin language and Addison even calls them the most finished of all poems.

After the publication of the 'Georgics' in 29, Virgil set about the greater task of writing a national epic. This was a plan which he seems to have formed early in life and for which he had been preparing for many years. He was forced against his own judgment to take it up thus early by urgent requests from Augustus and Mæcenas. In this field he had not the advantage of being a pioneer, for Nævius, in his 'Bellum Punicum,' and more particularly Ennius in his 'Annales' had treated of the early history of Rome in this way. The latter had connected the destiny of Rome with that of Troy and his epic was regarded as a great achievement. Virgil could hardly depart radically from the plan of his great predecessor, though he surpassed him not only in finish of style, but also by introducing the philosophical reflection and the breadth of treatment which distinguish history from mere chronicle. He made very free use of the works of his predecessors, and among the Greeks not only of the 'Iliad' and the 'Odyssey,' but of the Cyclic poets and of Apollonius of Rhodes. The proud boast of Propertius, *nescio quid maius nascitur Iliade*, as well as the subject of the epic, at once challenged a comparison with the Homeric poems which was freely accepted in antiquity; but in modern times this has been detrimental to Virgil's fame. The comparison is unfair, because the 'Æneid' and the Homeric poems really represent different types of the epic. The primitive epic, of which the 'Iliad' and the 'Odyssey' are unrivaled specimens, is not represented in Roman literature and is foreign to the Roman national character. The works of Nævius and Ennius, as well as those of Virgil and the later Roman epic writers, are of the historical type and in this field the supremacy of Virgil is almost universally recognized. While the Homeric poems represent the gradual accumulations of generations of singers, the 'Æneid' was composed as a complete work of art, with a definite purpose, the glorification of Rome and of the Julian house. The introduction of the gods of the Greek pantheon is in the nature of "epic machinery," since Virgil's generation had no faith in them, and the poet himself was doubtless too much influenced by Lucretius and by his philosophical studies in general, to be an exception to the prevailing skepticism. At the same time his nature was reverent and religious, and a desire to effect a revival of the old Roman piety doubtless formed part of his plan and was thoroughly in accordance with the wishes of his patrons. The 'Æneid' describes the wanderings and adventures of Æneas from the time of the fall of Troy until the establishment of his destined empire in Latium. In accordance with the regular rule of epic composition the poet plunges at once *in medias res*, and begins his tale with the sixth year of the voyage of his hero. The story of the earlier years is told graphically by Æneas himself at Dido's court in Carthage. While the greatness of the poem can only be fully appreciated when it is studied as a whole, it is more generally known in part; the last six books, though full of beautiful episodes, are less generally read because of the numerous and somewhat monotonous battle scenes which epic-tradition demanded of the poet, in which he is not at his best. Probably the most widely known part of the poem is the episode of Dido, which forms a complete epic tragedy and bears witness to the poet's familiarity with the masterpieces of Greek drama. The unhappy Carthaginian queen, like Æneas, had her mission

to perform and her empire to establish, but her plans were forced to give way before the mightier destiny of Æneas. Through the wiles of Venus, which even Juno's power cannot thwart, she falls in love with the Trojan hero and strives to detain him in Carthage. He finally leaves her in obedience to the command of Jupiter, and Dido slays herself as his ships are passing out of sight. As she dies, she prays that there may be eternal hatred between Carthage and Rome and the long and bloody struggle which ended in the destruction of the city which she founded forms the sequel to the tragedy. These wars furnished a motive for a great historical epic, which, however, found no worthier poet than the painstaking but insipid Silius Italicus, of the time of Nero and his successors. The desertion of Dido by Æneas finds little sympathy with the modern reader, and the "pious Æneas" appears in many respects a somewhat pitiful hero, but from the ancient point of view his action was justifiable and even praiseworthy, due as it was to submission to the will of the gods. Virgil intends Æneas to be the representative of the old Roman virtues, steadfastness of purpose, endurance, fidelity to a trust, courage and reverence for the gods. It is to the last quality especially, together with his devotion to his father, that he owes his epithet of *pius*. To the Roman reader he was the champion of civilization against barbarism, represented by Turnus and his godless associates. So far as the form of the poem is concerned, we see in it Virgil's growing mastery of the heroic hexameter and the results of his long years of study and training and we may note an advance even in the progress of the work itself. It is the hexameter of the 'Æneid' which deserves above all others the praise, "the stateliest measure ever molded by the lips of man."

But Virgil himself was conscious that he had not realized the ideal of his youthful days. In a letter to Augustus of the year 26, in answer to a request to see the poem or at least some part of it, he writes that he feels that he has been mad to undertake so great a task. A few years later, however, he was ready to read three books to the emperor, including the 6th, in which he inserted the tribute to the young Marcellus, contained in verses 860–886. It is said that Octavia, who was present, fainted as Virgil finished his effective rendering of these beautiful lines, and afterward presented the poet with 10,000 sesterces (about $500) for each verse of the memorial to her son. This story confirms in a general way the statement of Suetonius about Virgil's method of composing the 'Æneid.' He is said first to have written a version in prose, and to have turned it into verse in no special order; and he seems to have followed the same plan in putting the finishing touches to his work. That he never completed the latter process is evident from various inconsistencies which appear in the poem, and more particularly, since absolute consistency is not demanded of a poet, from the numerous incomplete and less polished lines. It is shown also by his project of a three years' tour amid the scenes of his earlier books, and by the fact that on his deathbed he gave directions that the 'Æneid' should be destroyed. This request was fortunately not granted, but Augustus had the work published, with only such revision as was absolutely necessary, by the poet's friends Varius and Tucca.

Besides the works of Virgil which are undoubtedly genuine, there have come down to us under his name a number of lesser poems: the 'Culex,' 'Ciris,' 'Moretum,' 'Diræ,' 'Ætna' and the 'Copa,' together with a collection of shorter pieces, called 'Catalepton' (minor poems). Donatus and Servius attribute poems with these titles to Virgil; and Lucan, Statius and Martial mention a 'Culex' of Virgil. It is certain that the 'Ætna' and the 'Diræ' are not his work, a fact which in itself discredits the testimony of the grammarians; as regards the rest there is a difference of opinion. The majority of scholars are inclined to regard nearly all these poems as spurious, assuming that they were collected and attributed to Virgil in the time of Nero, a view which disposes of all the ancient testimony, except perhaps that of Lucan. It is argued besides that some of them are unworthy of the author of the 'Georgics' and the 'Æneid,' an objection to which too much weight should not be given, while some, though not open to that charge, are in a manner wholly unlike that of Virgil as we know him. The arguments which have been based on certain metrical features of the poems seem to have little force. Just at present there is a growing tendency to claim these works for Virgil, and while the evidence in his favor cannot be said to be very strong, the same thing may be said of the contrary testimony. It is not likely that unanimity of opinion on this point will ever be reached.

Virgil's fame among his countrymen was immediate and permanent. He was hailed as the Roman Homer, and the efforts of a few jealous rivals to depreciate him were of no avail. His influence on the later Roman poetry was marked, notably on Persius, Silius, Statius, Ausonius and Prudentius. The same thing is true of the later prose, for example, that of Livy and Tacitus. The 'Æneid' was used as a textbook in the Roman schools as early as the days of Juvenal, and was made the subject of grammatical and stilistic commentaries by numerous writers. The writers of the decline not only imitated him freely, but introduced the custom of writing Virgilian *centos*, by arranging lines and half lines from his works in such a way as to give a sense entirely different from the original. This became a regular form of literary production, and they were even improvised. Among the Christians the works of Virgil escaped the general condemnation of the pagan literature, and he was believed to have received some measure of divine inspiration. From the Renaissance to the present time his influence on the poets of most European countries has been great. Dante, Chaucer, Spenser, Milton and Tennyson, as well as many others, bear testimony to their acquaintance with Virgil; and his poems, especially the 'Æneid,' have been translated into all the principal languages of Europe. It is only in comparatively recent times that the searching methods of modern criticism, especially in Germany, have brought Virgil's fame into question, and his detractors and his champions have in many cases shown equal lack of discrimination. The most common charges brought against

him are those of inferiority to the Homeric poems and of lack of originality. The former point has already been discussed; in considering the latter we must bear in mind that the ancient ideas about literary work differed decidedly from those of our own day, and that wholesale borrowing from the work of one's predecessors was not considered to be at all improper. Furthermore, Virgil had the power which all great writers have, of making what he borrowed his own; and, a thing which may be regarded as the supreme test, he not only imitated, but he was able to inspire imitation.

Besides the Virgil of history there is a mythical Virgil, singularly unlike the original. In comparatively early times the ancient biographers associated prodigies, prophetic of his future greatness, with his birth and the adoption of his works by the grammarians as canons of usage gave him a reputation for vast learning. This feeling brought about the custom as early as the 2d century of consulting the *sortes Virgilianæ,* by opening the 'Æneid' at random and drawing an omen from the words of the first passage on which the eye fell, a custom which that work has shared only with the Homeric poems and the Bible. As early as the days of Silius Italicus we see traces of a Virgilian cult, for the younger Pliny tells us that Silius made annual pilgrimages to Virgil's tomb, and kept his birthday with more ceremony than he did his own. A special series of legends of a most grotesque character grew up among the common people of Naples, who with an entire disregard of chronology and of historical truth associated his name with many marvelous inventions and with numerous undignified and disreputable adventures. These two streams of tradition united and found their way into the romantic literature of the Middle Ages, and even into works of a more serious character. They have given us the mythical Virgil, the necromancer and ally of the powers of darkness. His name was in consequence associated in the popular mind with *virga,* a magician's "wand," which led to the spelling Virgilius, and hence to our Virgil.

As regards the spelling of the poet's name, the Latin form Virgilius is established beyond question by inscriptional and other evidence as the only one until the 5th century. In English, Virgil was the current form until comparatively recent times, when "Vergil" was introduced in common with a general reform in the spelling of Greek and Latin proper names; this is the usual form in Germany. In England and in America both forms are used, as may be seen from the biographical list given below.

The first printed edition of Virgil was published at Rome, about 1469. Since then there have been many editions in all countries. The standard critical text is that of O. Ribbeck, Leipzig, 1859–68 (containing the famous *prolegomena*) and 1894–95 (without the *prolegomena*). Consult Norden, E., 'Æneid, Book VI' (Leipzig 1903). The best edition in English is on the whole that of J. Conington, revised by H. Nettleship (3 vols., 4th ed., London 1881–83). Of translations, which are numerous, may be mentioned those of Conington of the 'Æneid' into prose (1872), and into verse (1873); of R. D. Blackmore, the well-known novelist, of the 'Georgics' (1871), and of C. S. Calverly, of the 'Eclogues,' published in the Works (1901). See ÆNEID; GEORGICS OF VIRGIL; VIRGIL'S ECLOGUES.

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VIRGIL, Polydore, English ecclesiastic and author: b. Urbino, Italy, about 1470; d. there, 1555. He was educated at Bologna and dedicated his first work, 'Proverbiorum Libellus' (1498), to the Duke of Urbino. His 'De Inventoribus Rerum,' which followed (1499), became popular and was translated into English, Spanish and Italian. Being appointed chamberlain to Pope Alexander VI, he was sent to England in 1501 to collect the Peter's-pence with his kinsman, Adrian de Castello, then Cardinal Santi Chrysogoni, who was soon after made bishop of Hereford. Polydore was presented to the living of the Church at Langton, Leicestershire, in 1503, and after obtaining several preferments and becoming naturalized in England, he was imprisoned for sending abroad slanderous letters about Wolsey (1515), but apparently was soon released. In 1525 he published the first genuine edition of Gildas, the year after the treatise 'De Prodigiis,' dialogues in an attack upon divination. His most important work, 'Historiæ Anglicæ Libri XXVI,' appeared in 1534; the 27th book was added in 1555. About 1550 he obtained leave from Edward VI to return to Italy for his health's sake, without forfeiting his preferments and there he lived in Urbino until his death. His 'History' is a work of research, written in elegant Latin, and is the fullest narrative of the reign of Henry VII extant. He spared no pains to ensure accuracy, and a rational mind hindered him from accepting the exploits of Brut and Arthur as related by Geoffrey of Monmouth. Consult The Camden Society's translation of Polydore Virgil's 'History of England.'

VIRGILIA, vêr-jĭl'ĭ-â (from name of Latin poet *Virgil*), genus of leguminous trees, comprising only one species, *V. capensis,* the Cape Virgilia, native of the Cape of Good Hope. It attains a height of 15 to 30 feet; has rose-purple flowers, pinnate leaves with small leaflets. It is cultivated as an ornamental tree. In Cape Colony the wood of virgilia is used for yokes, spars, etc.; but it is not durable, being liable to be attacked by worms. The American yellow-wood tree, formerly regarded as a species of virgilia, is now referred to *Cladastris,* a genus native in Kentucky and Tennessee.

VIRGIL'S ECLOGUES. 'Virgil's Eclogues,' or Selections, also called 'Bucolics, or Songs of Herdsmen,' are 10 pastoral poems, the longest of which contains 111 lines. They were written in 43–37 B.C., when the poet was 27 to 33 years old and the times were troublous with the results of Philippi, and are his first unquestioned work. They are imitations or adaptations of the idylls of Theocritus, the Greek originator of pastoral poetry, who wrote in Syracuse and Alexandria about 270 B.C., and show that their author was enamored of his original and saturated with it.

The Eclogues are separable into two groups. The first group, comprising the second, third, fifth, seventh and eighth, are in the real pastoral strain, with a herdsman or shepherd soliloquizing or engaging with his fellows in a friendly contest of song. The poems of the second group, composed after the confiscations by Octavian in 41, which involved Virgil's own estate at his brithplace, Andes, near Mantua, perhaps soon afterward restored through the offices of powerful friends, introduce real personages and contain many contemporary allusions. In the first and ninth the poet himself apnears in the guise of shepherd, in the sixth and tenth Varus, a governor of Cisalpine Gaul, and Gallus, soldier-poet and commissioner of lands to whom, with Varus, Virgil was under obligation, are celebrated. The fourth, in honor of Pollio, the author and statesman who was Virgil's chief patron in the recovery of his land, is the famous prophetic idyll so long thought of as a foretelling of the birth of Christ.

The Eclogues are thus a mingling of the ideal and the actual, of pastoral and political, and are imitative, conventional and artificial in the extreme. In literary history, those of the second group are important as inaugurating the pastoral convention. The shepherds of Theocritus had been real in speech, action and environment; those of Virgil's second group are poets and public men masquerading as rustics in landscapes compounded of Italy, Theocritean scenes, and the poet's Arcadia, no more real than Marie Antoinette and her court playing dairymaids in the Petit Trianon. Yet in spite of their being in parts little more than translation, in spite of their mingling of the real and the ideal in the world of nature, and their dragging of city characters into pastoral scenes, criticism has agreed that the Eclogues are poetry of a high degree of charm. Their concern is not realism, but beauty. They express so genuine and so deep a love of beauty in nature wherever it is found, that in the reading of them the imagination is as little disturbed by the consciousness of incongruity or artificiality as it is in the reading of Lycidas. They have always been criticized for their unquestioned defects, but have always been admired and imitated as well. "Lycidas" speaks for Milton's admiration, and Pope's "Messiah," inspired by the fourth, is only one evidence of his esteem. Horace, Patrarch, Boccaccio, Erasmus, Spenser, Coleridge and Wordsworth were fond of them, and Macaulay praised them beyond reason, setting' them above both the 'Æneid' and the 'Georgics.'

The Eclogues may be read in the prose translation of Conington, or of Fairclough in the 'Loeb Classical Library,' and in the verse of Dryden. For appreciation, see works cited in the article on Virgil's ÆNEID.

GRANT SHOWERMAN.

VIRGIN ISLANDS, an island group formerly known as the Danish West Indies, situated about 40 miles eastward of Porto Rico and comprising 50 islands or islets, only three of which are of sufficient size to be known, except locally, even by name. The three major islands of the group are Saint Thomas, Saint John and Saint Croix or Santa Cruz.

Saint Thomas lies nearly in a direct line east and west, and is about 13 miles long, with an average width of a little more than two miles. It is the most important of the group because of the fine harbor at Charlotte Amalie on the south side; moreover its location on the direct line of communication between European ports and the entrance of the Panama Canal, as well as the direct line for vessels plying between ports of North and South America, makes it a logical distribution centre for goods sent to the Lesser Antilles. Its distance from New York is 1,400 miles; from Colón 1,020 miles; from La Guaira, Venezuela, 480 miles. The commerce of Saint Thomas itself — although its imports constitute about 70 per cent of those for all three islands — amounts to less than $1,000,000. The chief imports are foodstuffs and wearing apparel; exports, bay rum and a few hides. Charlotte Amalie is the only town on the island. Population of Saint Thomas is about 10,700.

Saint John — area 21 square miles — lies about four miles east of Saint Thomas. In size and importance the least of the major islands, it nevertheless possesses a harbor at Coral Bay which, according to engineers, requires only development to make it a rival of the better-known harbor at Charlotte Amalie. A very small acreage is devoted to sugarcane, but the chief industry is the growing of bay leaves and the distillation of the bay oil from which bay rum is made. The inhabitants, numbering less than 1,000 in all, are colored or of mixed blood, with a few exceptions.

Saint Croix, the largest, wealthiest and most thickly populated of the islands, lies about 40 miles southeast of Saint Thomas and has an area of 84 square miles. Upon it are the two towns, Frederiksted and Christiansted, locally known as Westend and Bassin. Christiansted (population about 4,500) was the seat of the Danish colonial government, and the largest government house in the Lesser Antilles is located on the main street of Christiansted near the wharf. Frederiksted, though smaller (population about 3 000), is much more important commercially. The southern districts

of Saint Croix are well suited to the application of modern agricultural methods, and here are found the large sugar estates, as well as a considerable acreage of sea-island cotton. The roads are excellent and many of the sugar estates are connected with the factories by industrial railroads. The total population of Saint Croix is given as 14,000, about 10 per cent being whites of unmixed blood.

The climate of these islands is healthful. For the year ending 30 June 1915 the records furnished by the director of the colonial agricultural experiment station in Saint Croix show that the coolest weeks were 18 to 31 January with a maximum temperature of 83° F. and a minimum of 65° F., and 8 to 14 March, maximum 82° F. and minimum 66° F. The hottest weeks were 31 August to 6 September, with 91° F. as maximum and 76° F. as minimum, and 7 to 13 September, with maximum 92° F., minimum 74° F. No records of rainfall are available for any of the group except Saint Croix. On that island, the average annual rainfall for 63 years was 31.26 inches. Steamers of the Quebec Steamship Company running from New York to British Guiana stop at Frederiksted in each direction. Their first port going south, as well as the last going north, is Saint Thomas. Until the middle of 1914 eight steamship lines were making regular calls at Saint Thomas. Monthly service between Saint Thomas and Porto Rico was formerly maintained by a steamer of the Compagnie Générale Transatlantique. The provisions of the coastwise shipping laws excluding vessels of foreign registry now apply to this service. Saint Thomas is headquarters of the West India and Panama Telegraph Company (Ltd.), whose duplicate cables extend to the west coast of South America and connect at Jamaica with cables from the United States and Europe. Two newspapers are published in Saint Thomas and three in Saint Croix. Both of these islands are provided with telephone service. The largest amount of sugar that has been exported from the whole group in the last 15 years was recorded in 1903, when the total was 19,275 short tons. The estimate for 1916 was 16,000 short tons. The manufactures are bay rum, sugar, molasses, rum, concentrated lime juice, etc. There are two banks—the National and the Saint Thomas Savings Bank. The islands originally belonged to Denmark, by which they were sold to the United States in 1916 for $25,000,000. Ratifications of the treaties of sale were exchanged on 17 Jan. 1917 and the United States took possession of the islands on 31 March 1917. Consult Brock, H. G., Smith, P. S. and Tucker, W. A, 'The Danish West Indies' (Special Agents Series, No. 129, Washington Government Printing Office, 1917).

VIRGIN MARTYR, The, a powerful tragedy by Philip Massinger and Thomas Dekker. It is based on the legend of the martyr Dorothea, slain in the reign of Diocletian. It was licensed in 1620 and was first printed in quarto form in 1622. It contains many passages of great beauty as well as several scenes most repellant in their coarseness but which in all probability are not the work of Massinger.

VIRGIN MARY, The. See MARY, THE MOTHER OF JESUS.

VIRGIN QUEEN, The, a term popularly applied to Queen Elizabeth, on account of her determination not to marry.

VIRGIN SOIL, a novel by Ivan Turgeneff, published in 1876, and in an English translation in 1877. Turgeneff gives in 'Virgin Soil' a graphic picture of the various moral and social influences at work in the Nihilistic movement in Russia. The motive of the story is deep and subtle, and developed with masterly skill and refinement.

VIRGINAL, an obsolete stringed instrument played by means of a keyboard, like the modern pianoforte. It was in form like a box, or desk of wood without legs or supports, and was usually placed on a table or stand. The strings were of metal, one for each note, and the sound was made by means of pieces of quill, whalebone, leather, or ocasionally elastic metal, attached to slips of wood which were provided with metal springs. The compass was about three to three and one-half octaves. See PIANOFORTE.

VIRGINIA, vėr-jĭn'ĭ-ą, the daughter of Lucius Virginius, whom Appius Claudius, the decemvir, endeavored to carry off from her parents. Her father, finding he could not save her by any other means, slew her in the open forum and raised an insurrection, which overthrew the decemvirate and restored the old magistracy (449 B.C.). The story is given in Livy, and Dionysius of Halicarnassus, and one of Macaulay's 'Lays' is based on it.

VIRGINIA, the chief of the 13 original States, the most southern of the Middle Atlantic group and one of the easternmost of all the States, lies on the Atlantic slope in lat. 36° 31′ and 39° 37′ N. and long. 75° 13′ and 83° 37′ W.—half way between Maine and Florida. The extreme length from the Atlantic to Kentucky (east to west) is 440 miles and the greatest width, from north to south, is 196 miles. Its land surface is 40,125 square miles and water area—rivers, land-locked bays and harbors—2,325 square miles. Virginia, called the Old Dominion, was certainly the mother of States. The colony included the territory of nearly every Southern State in whole or in part, and that of every other State with the exception of Maine. In its present proportions Virginia's boundaries are Maryland and West Virginia on the north, Maryland and the Atlantic Ocean on the east, North Carolina and Tennessee on the south and Kentucky and West Virginia on the west. Capital, Richmond.

Topography.—Physiographically the State is divided into three provinces of widely different characteristics. The first of these is the coastal plain, the most eastern of the provinces, constituting the area between the Atlantic Ocean and the higher-lying Piedmont country on its west, containing 9,500 square miles of surface, nearly one-fourth of the area of the State. It is known as Tidewater Virginia. The streams crossing this province are slow with deep channels. The Piedmont plateau, is the middle province and stretches from the coastal plain westward to the southeastern base of the Appalachian mountains. Its width varies from 40 miles to nearly 175. From an altitude of nearly 1,000 feet it slopes gently eastward to

VIRGINIA.

Estimated population, 2,192,019

COUNTIES

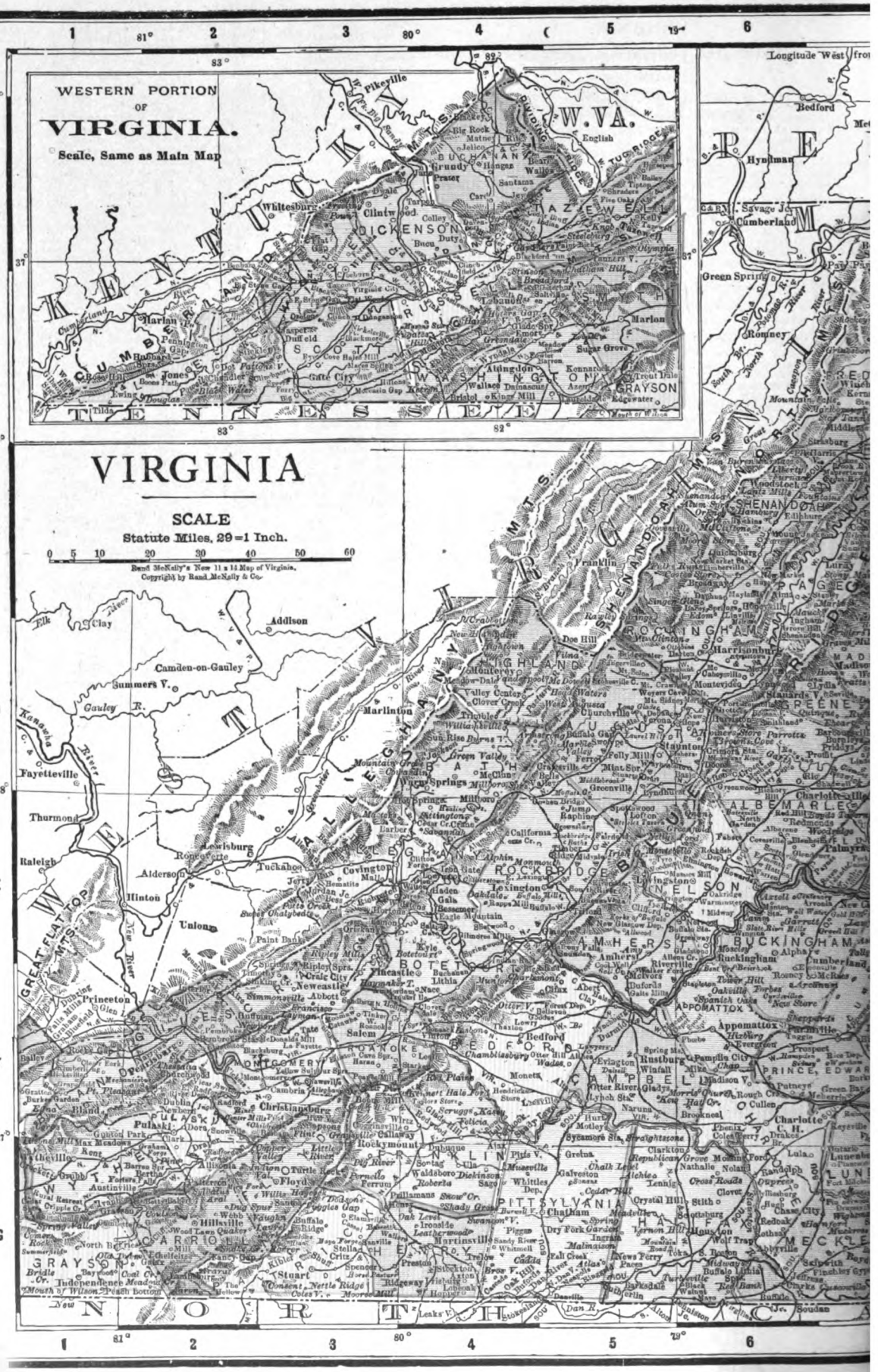
Pop.			Pop.		
36,650	Accomac	E 12	8,547	King William	E 9
36,636	Albemarle	D 6	9,752	Lancaster	E 10
25,560	Alexandria	C 9	23,840	Lee	B 2
19,921	Alleghany	E 3	21,167	Loudoun	B 8
8,720	Amelia	F 7	16,578	Louisa	D 7
18,932	Amherst	E 5	12,780	Lunenburg	G 7
8,904	Appomattox	F 6	10,055	Madison	D 7
43,049	Augusta	D 5	8,922	Mathews	F 11
6,538	Bath	D 4	28,956	Mecklenburg	G 7
29,549	Bedford	F 4	8,852	Middlesex	E 10
5,154	Bland	F 1	21,470	Montgomery	F 3
17,727	Botetourt	E 4	26,886	Nansemond	G 10
19,244	Brunswick	G 8	16,821	Nelson	E 6
12,334	Buchanan	A 4	4,682	New Kent	F 9
15,204	Buckingham	E 6	153,386	Norfolk	G 11
52,537	Campbell	F 5	16,672	Northampton	F 12
16,596	Caroline	D 9	10,777	Northumberland	E 11
21,116	Carroll	G 2	13,462	Nottoway	F 7
5,253	Charles City	F 9	13,486	Orange	D 7
15,785	Charlotte	F 6	14,147	Page	C 6
21,299	Chesterfield	F 8	17,195	Patrick	G 3
7,468	Clarke	B 8	69,729	Pittsylvania	G 5
4,711	Craig	F 3	6,099	Powhatan	E 7
13,472	Culpeper	D 8	14,266	Prince Edward	F 6
9,195	Cumberland	E 7	7,848	Prince George	F 9
9,199	Dickenson	A 3	11,526	Princess Anne	G 11
39,569	Dinwiddie	F 8	12,026	Prince William	C 8
21,225	Elizabeth City	F 11	17,246	Pulaski	F 2
9,105	Essex	E 10	8,044	Rappahannock	C 7
20,536	Fairfax	C 9	7,415	Richmond	E 10
22,526	Fauquier	C 3	54,497	Roanoke	F 3
14,092	Floyd	G 8	24,416	Rockbridge	E 4
8,323	Fluvanna	E 7	34,903	Rockingham	D 6
26,480	Franklin	F 4	23,474	Russell	B 4
18,651	Frederick	B 7	23,814	Scott	B 3
11,623	Giles	F 2	20,942	Shenandoah	C 6
12,477	Gloucester	F 10	20,326	Smyth	B 5
9,237	Goochland	E 8	26,302	Southampton	G 9
19,856	Grayson	G 1	15,809	Spottsylvania	D 8
6,937	Greene	D 6	8,070	Stafford	D 8
11,890	Greenesville	G 8	9,715	Surry	F 10
40,044	Halifax	G 5	13,664	Sussex	G 8
17,200	Hanover	E 8	24,946	Tazewell	A 5
151,065	Henrico	E 9	8,589	Warren	C 7
18,459	Henry	G 4	26,246	Warwick	F 10
5,317	Highland	D 4	39,077	Washington	B 4
14,929	Isle of Wight	G 10	9,313	Westmoreland	D 10
6,338	James City	F 10	34,162	Wise	B 3
9,576	King and Queen	E 9	20,372	Wythe	G 1
6,378	King George	D 9	7,757	York	F 10

Independent Cities

17,846	Alexandria	C 9	89,612	Norfolk	G 11
6,247	Bristol	B 4	25,582	Petersburg	F 8
3,245	Buena Vista	E 5	39,651	Portsmouth	G 11
6,765	Charlottesville	D 7	4,202	Radford	F 2
5,748	Clifton Forge	E 4	156,687	Richmond	F 9
20,021	Danville	G 5	43,284	Roanoke	F 4
5,874	Fredericksburg	D 8	11,654	Staunton	D 6
32,940	Lynchburg	F 5	2,714	Williamsburg	F 10
20,562	Newport News	G 10	5,864	Winchester	B 7

Incorporated Cities, Towns, Villages, Etc.

1,757	Abingdon	B 4	204	Clifton	C 9
17,846	Alexandria	C 9	5,748	Clifton Forge	E 4
618	Amherst	E 5	252	Clinchport	B 3
1,090	Appalachia	A 2	342	Clintwood	A 3
1,324	Ashland	E 8	258	Clover	G 6
1,388	Barton Heights, Henrico	E 9	645	Coeburn	B 3
			721	Colonial Beach	D 10
1,632	Basic City	D 5	157	Columbia	E 7
2,508	Bedford City	F 4	283	Courtland	G 9
296	Belle Haven	E 12	4,234	Covington	E 3
876	Berryville	B 7	1,802	Crewe	F 7
2,590	Big Stone Gap	B 2	1,795	Culpeper	D 7
875	Blacksburg	F 2	1,299	Damascus	B 5
1,486	Blackstone	F 8	20,021	Danville	G 5
247	Bland	F 1	516	Dayton	D 6
305	Bond, Wise	B 3	1,653	Dendron	F 9
433	Bowling Green	D 9	703	Drakes Branch	F 6
421	Boydton	G 7	119	Dry Forks	G 5
505	Boykins	G 9	350	Dublin	F 2
239	Branchville	G 9	122	Duffield	B 3
859	Bridgewater	D 6	158	Dumfries	C 9
6,247	Bristol (P.O. Bristol, Tenn.)	B 4	397	East Stone Gap	B 3
			322	Eastville	F 11
416	Broadway	C 6	574	Edinburg	C 6
504	Brookneal	F 6	330	Elba	G 5
792	Buchanan	E 4	873	Elkton	D 6
3,245	Buena Vista	E 5	2,018	Emporia	G 8
653	Burkeville	F 7	413	Fairfax	C 9
535	Cambria	F 3	1,128	Falls Church	C 9
1,948	Cape Charles	F 12	2,971	Farmville	F 7
329	Charlotte Court House	F 6	479	Fincastle	F 3
			369	Floyd	G 3
6,765	Charlottesville	E 7	2,271	Franklin	G 9
1,662	Chase City	G 6	5,874	Fredericksburg	D 8
1,113	Chatham	G 5	1,775	Fries	G 2
1,419	Chincoteague Island	E 13	1,133	Front Royal	C 7
			755	Galax	G 1
1,568	Christiansburg	F 3	599	Gate City	B 3
630	Claremont	F 9	324	Glade Spring	B 4
794	Clarksville	G 6	806	Gladeville (P. O. Wise)	B 3
252	Cleveland	B 4			
407	Glasgow	E 5	2,452	Pocahontas	F 1
564	Gordonsville	D 7	194	Port Royal	D 9
165	Goshen	E 5	39,651	Portsmouth	G 11
1,917	Graham	F 1	559	Potomac, Alexandria	C 9
264	Grundy	A 4			
315	Hamilton	B 8	4,807	Pulaski	F 2
5,505	Hampton	G 11	388	Purcellville	B 8
4,879	Harrisonburg	D 6	4,202	Radford	F 2
162	Haymarket	C 8	251	Remington	C 8
802	Herndon	C 9	743	Richlands	A 4
1,817	Highland Park, Henrico	E 9	156,687	Richmond	F 9
			393	Ridgeway	G 4
138	Hillsboro	B 8	43,284	Roanoke	F 4
288	Hillsville	G 2	967	Rocky Mount	G 3
236	Holland	G 10	379	Roundhill	B 8
869	Honaker	A 4	3,849	Salem	F 3
516	Houston	G 6	1,628	Saltville	B 5
600	Iron Gate	E 4	283	Scottsville	E 6
297	Ivor	G 10	1,431	Shenandoah	D 6
383	Jonesville	B 2	456	Shendun, Rockingham	D 6
196	Kenbridge	G 7			
432	Keysville	F 7	110	Singerglen	C 6
281	La Crosse	G 7	1,278	Smithfield	G 10
1,733	Lawrenceville	G 8	3,516	South Boston	G 6
366	Lebanon	B 4	732	South Hill	G 7
1,597	Leesburg	B 9	218	Stanleyton	C 7
2,931	Lexington	E 4	11,654	Staunton	D 6
318	Louisa	D 8	483	Stephens City	B 7
192	Lovettsville	B 8	762	Strasburg	C 7
1,218	Luray	C 7	388	Stuart	G 3
32,940	Lynchburg	F 5	7,008	Suffolk	G 11
139	McDowell	D 5	169	Tacoma	B 3
1,217	Manassas	C 9	698	Tangier, Accomac	E 12
2,727	Marion	B 5	478	Tappahannock	E 9
3,368	Martinsville	G 4	1,230	Tazewell	A 5
263	Middleburg	C 8	240	Timberville	C 6
363	Middletown	B 7	431	Troutdale	B 5
260	Mineral	D 8	296	Upperville	C 8
240	Monterey	D 4	475	Urbanna	E 10
228	Mt. Crawford	D 6	682	Victoria	G 7
479	Mt. Jackson	C 6	578	Vienna	C 9
221	Mt. Sidney	D 5	1,928	Vinton	F 4
975	Narrows, Augusta	D 5	270	Virgilina	G 6
3,500	National Soldiers Home	F 11	320	Virginia Beach	G 12
			485	Wachapreague	E 12
160	Newbern	F 2	570	Wakefield	G 8
106	New Hope	D 6	1,427	Warrenton	C 8
638	New Market	C 6	235	Washington	C 7
20,562	Newport News	G 10	331	Waterford	B 8
89,612	Norfolk	G 11	1,064	Waverly	F 9
342	North Tazewell	A 5	1,389	Waynesboro	D 5
1,866	Norton	A 3	1,397	West Point	E 10
246	Occoquan	C 9	70	Wiehle, Fairfax	C 9
1,001	Onancock	E 12	2,714	Williamsburg	F 10
674	Orange	D 7	5,864	Winchester	B 7
168	Pamplin City	F 6	328	Windsor	G 10
470	Pearisburg	F 2	806	Wise	B 3
792	Pennington Gap	B 2	1,314	Woodstock	C 6
25,582	Petersburg	F 8	3,054	Wytheville	G 1
2,394	Phoebus	G 11	136	Yorktown	F 11


WESTERN PORTION
OF
VIRGINIA.
Scale, Same as Main Map
VIRGINIA
SCALE
Statute Miles, 29 = 1 Inch.
0 5 10 20 30 40 50 60
Rand McNally's New 11 x 14 Map of Virginia.
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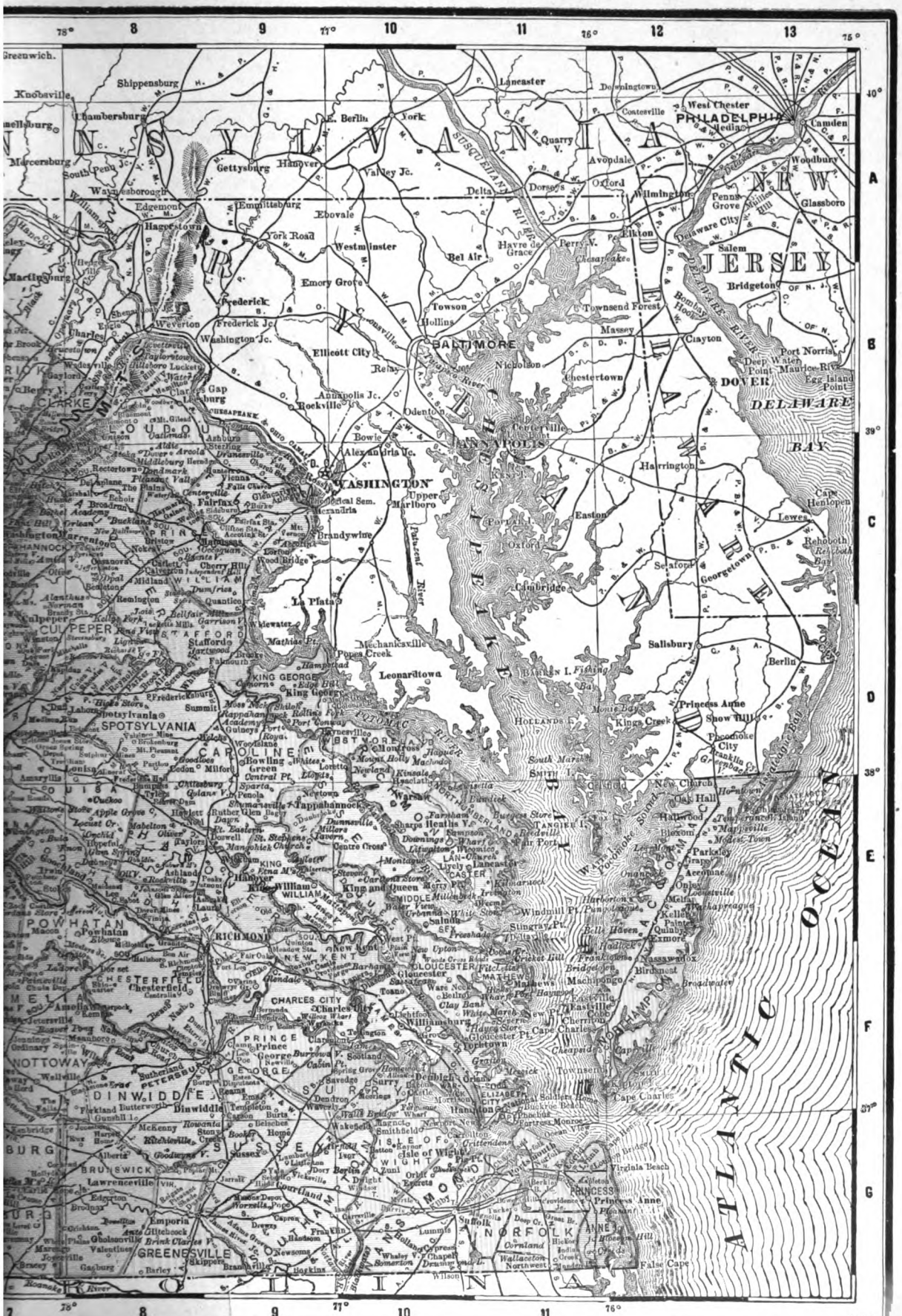
KENTUCKY
W. VA.
TENNESSEE
NORTH CAROLINA
Longitude West
Bedford
Cumberland
Green Spring
Romney
Harrisonburg
Staunton
Charlottesville
Lexington
Fayetteville
Raleigh
Thurmond
Hinton
Union
Princeton
Christiansburg
Rocky Mount
Danville
Pittsylvania
Appomattox
Buckingham
Amherst
Campbell
Prince Edward
Halifax
Mecklenburg
Grayson
Wythe
Pulaski
Montgomery
Roanoke
Franklin
Bath
Rockbridge
Botetourt
Augusta
Rockingham
Shenandoah
Page
Greene
Albemarle
Nelson
Fluvanna
Buchanan
Dickenson
Russell
Tazewell
Scott
Washington
Smyth
Wise
Lee
Marion
Sugar Grove
Abingdon
Gate City
Jonesville
Clintwood
Whitesburg
Pikeville
Grundy
Hagan
Bluefield
Tazewell
Addison
Camden-on-Gauley
Summers V.
Marlinton
Lewisburg
Alderson
Tuckahoe
Covington
Iron Gate
Clifton Forge
Buena Vista
Lexington
Harrisonburg
Woodstock
Shenandoah
Luray
Front Royal
Winchester
Strasburg
Middletown
Charlestown
Harpers Ferry
Leesburg
Alexandria
Fairfax
Manassas
Fredericksburg
Culpeper
Orange
Gordonsville
Charlottesville
Scottsville
Lynchburg
Amherst
Appomattox
Farmville
Hampden-Sydney
Prince Edward
Clarksville
Boydton
Halifax
South Boston
Danville
Martinsville
Stuart
Patrick Springs
Meadows of Dan
Floyd
Rocky Mount
Franklin
Suffolk
Portsmouth
Norfolk
Virginia Beach
Cape Henry
Hampton
Newport News
Williamsburg
Yorktown
Gloucester
Tappahannock
Urbanna
Kilmarnock
Irvington
Warsaw
Montross
Colonial Beach
Fredericksburg
Spotsylvania
Chancellorsville
Wilderness
Orange
Gordonsville
Louisa
Mineral
Trevilians
Cuckoo
Yanceyville
Milton
Reidsville
Eden
Leaksville
Spray
Madison
Wentworth
Stoneville
Mayodan
Draper
Dan R.
Roanoke R.
Staunton R.
Shenandoah R.
Potomac R.
Rappahannock R.
Rapidan R.
Pamunkey R.
Mattaponi R.
Chickahominy R.
James R.
Appomattox R.
Nottoway R.
Meherrin R.
Blackwater R.
Chowan R.
Elk River
Gauley R.
Kanawha River
New River
Greenbrier R.
Tug Fork
Big Sandy R.
Cumberland Mts.
Allegheny Mts.
Shenandoah Mts.
Blue Ridge
Great Flat Top Mts.
Dividing Ridge
Tug Ridge
Clinch Mts.
Powell Mts.
Sandy Mts.
Pine Mts.
Cumberland Gap
Natural Bridge
Natural Tunnel
Peaks of Otter
Hawksbill
Stony Man
Massanutten Mts.
Blue Ridge Tunnel
Chesapeake & Ohio R.R.
Norfolk & Western R.R.
Virginian R.R.
Southern R.R.
Atlantic Coast Line R.R.
Seaboard Air Line R.R.
Richmond, Fredericksburg & Potomac R.R.
Washington Southern R.R.
Washington Southern Electric R.R.
Washington, Alexandria & Mount Vernon Electric R.R.
Washington, Alexandria & Mount Vernon R.R.
Washington, Arlington & Falls Church Electric R.R.
Washington, Arlington & Falls Church R.R.
Washington, Baltimore & Annapolis Electric R.R.
Washington, Baltimore & Annapolis R.R.
Washington, Spa Springs & Gretta R.R.
Washington, Spa Springs & Gretta Electric R.R.
Washington, Woodside & Forest Glen R.R.
Washington, Woodside & Forest Glen Electric R.R.
Washington, Georgetown & Great Falls Electric R.R.
Washington, Georgetown & Great Falls R.R.
Washington, Georgetown & Great Falls Steam R.R.
Washington, Georgetown & Great Falls Steam Electric


PENNSYLVANIA
MARYLAND
DELAWARE
NEW JERSEY
VIRGINIA
ATLANTIC OCEAN
BALTIMORE
WASHINGTON
PHILADELPHIA
RICHMOND
NORFOLK
DOVER
Chesapeake Bay
Delaware Bay
Susquehanna River
Potomac River
Rappahannock River
James River
York River
Patuxent River
Delaware River
Chesapeake & Ohio Canal
Delaware & Raritan Canal
Chesapeake & Delaware Canal
Dismal Swamp Canal
Albemarle Sound
Pamlico Sound
Currituck Sound
Greenwich
Shippensburg
Knobsville
Chambersburg
Mercersburg
Gettysburg
Hanover
York
Lancaster
Downingtown
West Chester
Camden
Woodbury
Glassboro
Wilmington
Delaware City
Salem
Bridgeton
Port Norris
Egg Island Point
Cape Henlopen
Lewes
Rehoboth
Georgetown
Seaford
Harrington
Milford
Frederick
Hagerstown
Westminster
Emmitsburg
Edgemont
Waynesborough
Greencastle
Martinsburg
Charles Town
Harper's Ferry
Leesburg
Fairfax
Alexandria
Manassas
Warrenton
Culpeper
Fredericksburg
Stafford
Spotsylvania
Orange
Louisa
Goochland
Powhatan
Chesterfield
Amelia
Nottoway
Dinwiddie
Prince George
Sussex
Brunswick
Lawrenceville
Emporia
Greensville
Gloucester
Mathews
Middlesex
King and Queen
King William
King George
Westmoreland
Northumberland
Richmond
Lancaster
Essex
Caroline
Hanover
Henrico
New Kent
Charles City
James City
Williamsburg
Prince George
Surry
Isle of Wight
Southampton
Princess Anne
Virginia Beach
Cape Charles
Cape Henry
Cape Fear
Salisbury
Berlin
Princess Anne
Snow Hill
Pocomoke City
Crisfield
Somerset
Dorchester
Talbot
Queen Anne's
Kent
Cecil
Harford
Baltimore
Carroll
Frederick
Washington
Allegany
Garrett
Montgomery
Prince George's
Anne Arundel
Howard
Calvert
Charles
St. Mary's
Loudoun
Fauquier
Rappahannock
Madison
Greene
Albemarle
Nelson
Amherst
Appomattox
Buckingham
Cumberland
Powhatan
Chesterfield
Amelia
Nottoway
Dinwiddie
Prince George
Sussex
Brunswick
Lawrenceville
Emporia
Greensville
Gloucester
Mathews
Middlesex
King and Queen
King William
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Westmoreland
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Richmond
Lancaster
Essex
Caroline
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Prince George
Surry
Isle of Wight
Southampton
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Snow Hill
Pocomoke City
Crisfield
Somerset
Dorchester
Talbot
Queen Anne's
Kent
Cecil
Harford
Baltimore
Carroll
Frederick
Washington
Allegany
Garrett
Montgomery
Prince George's
Anne Arundel
Howard
Calvert
Charles
St. Mary's
Loudoun
Fauquier
Rappahannock
Madison
Greene
Albemarle
Nelson
Amherst
Appomattox
Buckingham
Cumberland

an altitude of 200 to 400 feet. This province differs from the coastal plain in the nature and origin of its surface features and in the age, kinds and structure of its rocks. Here is the only area of free-burning coal to be found in the eastern part of the United States contiguous to tidewater. This section is known as Piedmont Virginia. Its extent is about 15,500 square miles.

From the southeastern slope of the Blue Ridge the Appalachian Mountain province in Virginia stretches to the western boundary of the State, but physically the province extends northeast and southwest far beyond these limits. Within Virginia it covers about 16,250 square miles, with these characteristic divisions: (1) The Blue Ridge, easternmost range of the Appalachians, a mountain belt from 3 to 20 miles in width, extending from Harper's Ferry in a southwesterly direction across the State, advancing from an elevation of 1,200 to more than 4,000 feet. The rocks are igneous pre-Cambrian, Cambrian, sandstones and shales and silicious sediments of the same age; (2) the Great Valley and (3) the Alleghany ridges, bounded by the Blue Ridge on the southeast and the Alleghany front on the northwest. The rocks are limestone, shale and sandstone ranging in age from Cambrian to carboniferous.

Five peaks in Virginia exceed 5,000 feet in elevation and 17 fall between 4,000 and 4,500. Nine thousand seven hundred square miles of the State's surface have an altitude from 0 to 100 feet above tide; 10,500 square miles from 100 to 500; 5,950 square miles from 500 to 1,000; 4,700 square miles from 1,000 to 1,500; 4,200 square miles from 1,500 to 2,000; 6,800 square miles from 2,000 to 3,000 and 600 square miles from 3,000 to 4,000.

Rivers.— The chief rivers in Virginia are the James, Potomac, Rappahannock, York, Blackwater, New River, Holston, Mattapony, Pamunkey, North Anna, South Anna, Rapidan, Chickahominy and Shenandoah. All of them are historic, but the James is the best known. Rising in the Alleghany uplands, it passes through several mountain gorges into the Great Valley which it leaves at the beautiful water gap in the Blue Ridge at Balcony Falls. Thence it winds its way through the most historic country in Virginia to the Atlantic. The Roanoke rises in Montgomery County, in Southwest Virginia, passes through the Blue Ridge by the Roanoke Water Gap, where its name is changed to Stanton River, on to its confluence with the Dan, where it recovers its original name. New River rises on the Piedmont plateau, and, unlike the general trend of Virginia water courses, flows westward through the Blue Ridge, across the Valley of Virginia, through the Appalachians into the Great Kanawha and eventually mingles its flood with that of the Ohio. The eastern Virginia rivers — the Pamunkey, the Chickahominy, the York, the Blackwater — are sluggish, unpicturesque streams of great value to the country they drain. There are occasional fresh-water lakes.

The largest features of the drainage system are the tidal estuaries which have invaded the coastal plain as far as the "fall line" belt, dividing it into peninsulas long and narrow in outline. The greatest of these estuaries is, of course, Chesapeake Bay, to which the estuaries of the Potomac, the Rappahannock and the James — from 150 to 200 miles long — and the smaller ones of the York, the Wicomico, the Piankatank and the Nansemond rivers and of Mobjack Bay and many of lesser tide pay their constant tribute. The rivers of the coastal plain are tidal with low velocities and are navigable as far inland as the Piedmont border — the so-called "fall line belt."

Climate.— Virginia lies within the temperate zone and, speaking broadly, there are no great extremes of heat and cold. The temperature is quite stable from day to day in the coastal plain. The mean temperature is: Winter 39.8°, spring 56.8°, summer 77.2°, autumn 60.8°. The average number of days each year with a maximum temperature above 90° is 28; below 32°, 55. Greater ranges in the monthly and seasonal mean occur in the elevated area known as the Piedmont province. Marked changes occur suddenly, but not frequently ,in winter. Mean temperature: Winter 35.8°, spring 55.3°, summer 75°, autumn 57.4°; annual 55.9°; average number of days each year with maximum temperature above 90°, 25; below 32°, 72. In the Great Valley province the valleys become filled with heated air in the day and at night cool currents flow down the mountains into the valleys. For this reason the greatest differences in mean daily and monthly temperatures occur here. Mean temperature: Winter 33.8°, spring 52.7°, summer 71.3°, autumn 55.1°, annual 53.2°; average number of days each year with minimum temperature above 90°, 13; below 32°, 98. The average annual precipitation in the coastal plain province is 46.61 inches; the Piedmont 42.50 and the Great Valley 43. The prevailing direction of the wind is northeast in the coastal plain; northwest in the Piedmont plateau and west in the Great Valley; mean annual velocity for the State 6.3.

Geology.— The coastal plain is composed of sediments, mostly sands, clays and marls, ranging in age from lower cretaceous to quarternary. The beds strike in general from north to south, with a low easterly dip. The Piedmont plateau is formed of a mixture of highly metamorphosed sedimentary and igneous rocks of prepaleozoic and early paleozoic age, with exposures of fresh rock less numerous than farther north. The rocks are crystalline with gneisses and schists. The abundance and excellence of the granite make them important in commercial work. There are areas of triassic sediments and over parts of the south central portion of this province are found volcano-sedimentary rocks. The Blue Ridge is composed of pre-Cambrian igneous rocks with Cambrian sandstones and slates on the northwest and on the southeast, in places, by silicious sediments of the same age. The Valley of Virginia and the Alleghany ridges are composed of paleozoic sedimentary rocks ranging in age from Cambrian to carboniferous.

Minerals.— Coal is by far the largest mineral interest of the State. The annual output has been about 8,000,000 short tons, of which more than nine-tenths was bituminous, and its value at the mines has been somewhat in excess of $8,000,000. In 1916 the output was 9,707,474 short tons, valued at $10,261,424. Practically all of it was mined in the mountains

of southwest Virginia, in the counties of Wise, Tazewell, Montgomery, Lee, Russell and Pulaski, although there is coal elsewhere. Iron is mined in the Valley and Piedmont provinces of the west and southwest. At Crimora, in the Valley of Virginia, more manganese has been taken than from any other mine in the United States. In 1916 the output of manganese and carboniferous iron ores was 40,117 long tons, valued at $217,136. Other mineral productions for the year 1916 were: Coke 1,242,332 short tons, value $1,695,361; clay products, including brick and tile, clay mined and sold and pottery, $1,695,361; limestone $1,087,247; iron ores 486,798 long tons, $1,000,118; soapstone and talc 28,355 short tons, $564,228; granite $451,697; mineral waters 2,313,616 gallons, $248,906; slate 36,007 squares, $165,483; sandstone $66,217.

Natural Attractions.— The best known and perhaps the most visited of the natural attractions of the State is the Natural Bridge, 14 miles from Lexington in the county (Rockbridge) named for it. This great bridge, in the formation of which human agency had no part, is 215½ feet high, measuring from the top of the span to the creek which flows under it. In the same county, 12 miles southeast of the Warm Springs, is the "Blowing Cave," which emits a constant current of air which is strongest in dry, frosty weather and weakest in long periods of rain. "Regular inspirations and expirations of air by caverns and fissures have been probably enough accounted for by supposing them combined with intermitting fountains, as they must, of course, inhale air while their reservoirs are emptying themselves and again emit it while they are filling, but a constant issue of air only varying in its force as the weather is dryer or damper will require a new hypothesis." Sixteen miles northeast of the Warm Springs, in Bath County, is a spring whose waters ebb and flow. At intervals, in the dryest weather of summer, the water flows out as if suddenly released from a dam, and continues at flood 10 or 12 hours, and then gradually declines. In the same kind of weather the periods of flow will vary from two to three days and sometimes occur daily. There are numerous caves. The most noted are Weyer's in Augusta County and the Luray caverns in Page. Crabtree Falls, near the summit of the Blue Ridge mountains, in Nelson County, consist of three descents, the longest leap being 500 feet. Balcony Falls, at the meeting of Rockbridge, Amherst and Bedford counties, where the James makes its way through the Blue Ridge, is a scene but little inferior to the spectacle of the passage of the Potomac through the same mountains at Harper's Ferry. Mountain Lake, in Giles County, 3,500 feet above the sea, is the antithesis of Lake Drummond in the Dismal Swamp. Scott County furnishes a Natural Tunnel by which buffalo made their way through the mountain. The use of it by the Virginia and Southwestern Railroad illustrates the change which has taken place since the days of Daniel Boone.

Agriculture.— Livestock is the most considerable interest, the value of the product of 1917 being estimated at $200,000,000, an increase of $158,973,000 over 1900. Dairy products have grown from $1,900,000 in 1900 to $17,000,000 in 1917, and, in the same period, poultry from $2,000,000 to $13,000,000, and orchard fruits from $2,663,000 to $7,000,000. Corn is the great Virginia crop. Wheat has moved up to second place from fourth, changing places with tobacco. Crop products and their value for 1917 (the value of the 1900 product in each case known is given in parentheses, for comparison) as estimated by the Commissioner of Agriculture are: Corn, 66,700,000 bushels, value $100,000,000 ($16,300,000); wheat, 19,300,000 bushels, value $38,600,000 ($6,200,000); potatoes, 17,300,000 bushels, value $33,000,000 ($2,500,000); tobacco, value $32,000,000 ($7,670,000); peanuts, value $7,000,000 ($2,261,000); oats, 5,000,000 bushels, value $3,000,000 ($1,104,000); rye, 1,000,000 bushels, value $2,500,000; buckwheat, 500,000 bushels, value $625,000; all trucks, value $15,000,000 ($5,000,000); miscellaneous, value $11,000,000 ($470,000).

Fisheries.— The product of fish and oysters reached the value of approximately $18,000,000 in 1917. Attention to oyster planting yielded an enormous increase of food. The value of fish and oysters in 1900 was $7,000,000.

Manufactures.— In 1916, 2,793 manufacturing plants in 53 industries reported to the Virginia bureau of labor and industrial statistics. Capital, $183,063,795.43; wages, $62,504,658.75; persons employed, 132,934; value of product, $379,529,528.04. This summary includes the production of coal and coke but not the capital invested nor the wages paid. The industries with products valued at more than $3,000,000 annually were: Iron and machinery, $69,905,517.39; tobacco stemmers and rehandlers, $22,672,814.80; cigars, cigarettes and cheroots, $17,808,239.53; cotton mills, $16,322,036.07; tanneries, $16,208,548.86; peanut factories and coffee roasters, $14,873,579.59; flour mills, $14,064,076.30; coal and coke, $11,539,641.57; paper and pulp mills, $10,881,349.98; tobacco factories, $10,056,714.14; woodenware, baskets, boxes and shooks, $9,359,171.92; boots and shoes, $6,152,066.30; overalls and shirts, $4,676,605.11; sash, doors and blinds, $4,602,140.61; printing, engraving and binding, $4,235,746.19; knitting mills, $4,138,526.18; trunk and bag factories, $3,237,508.69, and artificial ice, $3,101,367.60. Stable labor conditions, much raw material, including the best of steam coal, abundant water power and almost unsurpassed transportation facilities by rail and water are favorable.

Tobacco Industry.— Tobacco became the most important industry in Virginia in the first decade of the colony; at the beginning of the fourth (1642) it had become the sole legal tender currency. It has always ranked near the top of Virginia staples. In 1916 it was second; in 1917 the fourth, corn, wheat and potatoes having first, second and third places. The value of the product in 1917 was $32,500,000 ($18,863,000 in 1916). Danville, Lynchburg and Richmond are the largest tobacco markets in Virginia and among the largest in the United States.

Forest Products.— According to the best available information the total amount of merchantable timber in the State is approximately 30,000,000,000 board feet, of which about 11,000,000,000 are oak, principally white, red, black and chestnut oak. About 9,000,000,000 board feet are yellow pine, mostly short leaf and loblolly, and the remainder chestnut, yellow

poplar, maple, beech, sweet gum, hickory, basswood, hemlock, white pine, cypress, black gum, black locust and black walnut, approximately in the order named. In the coastal plain the timbered areas and cleared areas are about equal in extent. The dominating species is loblolly pine (*Pinus taeda*), with oaks, sweet gum, cypress, yellow poplar and hickory. There are considerable areas of white cedar and juniper in the Dismal Swamp section. In the Piedmont plateau probably rather more than half of the area is wooded, the typical timber being a mixture of yellow pine and hardwoods, the hardwoods predominating except on lands that were formerly cultivated. The yellow pine is chiefly short leaf (*Pinus echinata*), with considerable amounts of loblolly pine on the eastern edge of the region. The hardwoods are the various oaks, hickory, yellow poplar, chestnut and some maples. There are still considerable areas of practically virgin timber in the more inaccessible parts of the mountains.

Transportation.— There were, in 1916, 26 steam railways with operating revenues exceeding $100,000 a year, and 20 with operating revenues under that total, with an aggregate mileage in Virginia of 4,777.61. The longest of these within the State are the Norfolk and Western, 1,176.78 miles; Southern, 884.78; Chesapeake and Ohio, 783.50; the Virginia Railway Company, 333.51. Other important railways are the Seaboard Air Line, Atlantic Coast Line, the Virginia and Southwestern, the Norfolk Southern; the Carolina, Clinchfield and Ohio; the New York, Philadelphia and Norfolk; the Richmond, Fredericksburg and Potomac, and the Louisville and Nashville Railway. Communication with every section of the State and with every leading port and city is ample, and is expanding as increased facilities are required. Mileage of electric railways in the State in 1916 was 486.9. In tidewater Virginia the waterways are a vast means of transportation.

Commerce.— The imports of merchandise into Norfolk, Newport News and Portsmouth during the year ending 30 June 1917 amounted to $17,986,946; Richmond, $767,399; Petersburg, $575,661; a total for the State of $19,330,006. All exports were recorded at Newport News, Norfolk and Portsmouth and amounted to $137,009,596. Hampton Roads is unsurpassed in harbor facilities — it is the largest and safest on the Atlantic Coast — and the cities on its shores are of great and increasing importance in foreign, coastwise and internal commerce. In a decade Virginia imports have increased fivefold and exports tenfold.

Banks and Banking.—At the close of business 11 December 1917 there were in Virginia 148 national banks with a capital of $19,918,000 and deposits of $151,988,000, and 288 State banks and trust companies with a capital of $13,663,710 and deposits of $91,503,926.73. Deposits in the Federal Reserve Bank, Richmond, on 7 Dec. 1917 were $97,149,000.

State Government.— Seven of the State officers — governor, lieutenant-governor, attorney-general, secretary of the commonwealth, commissioner of agriculture and immigration, superintendent of public instruction and State treasurer — are elected by the people every four years. The adjutant-general and the members of the Corporation Commission are appointed by the governor, and other commissioners and the judiciary are elected by the legislature. The legislature is elected every four years and meets biennially in even years in sessions limited to 60 days, which may be extended without pay. The governor's salary, $5,000. Representatives in Congress are 10. The present constitution was proclaimed in 1902.

State Finances.— On 1 Oct. 1916, the State debt was $23,347,125.97, of which $5,518,754.16 were Riddleberger bonds (Act 1882), $15,360,765.96 Century bonds (Act 1892) and $2,467,605.85 the school and college and asylum and church certificate debt. The assessed valuation — about two-thirds of the actual value — on the land books of 1916 was: Personal property, $343,119,228; real estate, $627,025,643; mineral lands, minerals, improvements, machinery, etc., under development, $9,180,894; mineral lands, minerals, etc., not under development, $17,951,995; standing timber, $1,725,557. Receipts (including balance, etc.) for the year ending 30 Sept. 1916 were $8,797,303.01; disbursements (including $119,423.92 paid to sinking fund), $8,440,340.05. The balance, 1 Oct. 1916, was $356,962.96.

Charities and Corrections.— The State provides four hospitals for the insane — the Eastern at Williamsburg, the Western at Staunton, the Southwestern at Marion and the Central, for colored insane, at Petersburg — an epileptic colony and a colony for the feeble-minded (Madison Heights), two sanatoria for the tuberculous (Catawba and Charlotteville), a school for the deaf and blind (Staunton), one for colored deaf and blind (Newport News). Private philanthropy maintains 33 orphanages, 7 foundling hospitals, 2 placing-out agencies, 3 travelers' aid societies, 4 juvenile protective associations, 8 Salvation Armies, 3 industrial schools, 15 organized charity associations, 8 social settlements, 10 homes for the aged, 12 visiting nurse associations, 6 dispensaries (not connected with medical colleges as hospitals, of which 23 do charity work), and 7 maternity and rescue hospitals. In 1916 2,532 white persons and 2,366 colored were supported in almshouses at an annual per capita cost of $123.29; 3,037 white and 2,901 colored were given outdoor relief. There were 741 convicts in the penitentiary 30 Sept. 1916; 878 were received during the year (56 less than the previous year); released by discharge, death, pardon and escape, 891; per capita cost of maintenance for the year (based upon operation and average attendance), $160.96. Jail commitments in 1916, 29,426, a decrease of 2,599 from 1915.

Education.— The Virginia free school system dates from 1870. It is controlled by the State Board of Education, composed of the governor, the attorney-general, the superintendent of public instruction, three members from the faculties of State institutions for higher education, one county and one city superintendent of schools. In 1915 the public school population (between the ages of 7 and 21) was 657,513; number of schools, 12,343; pupils enrolled, 474,210; teachers, 12,507; revenue, $7,215,602.57; total cost of the public schools, $7,047,713.71. For technical and advanced education the State has made provision as follows: The University of Virginia, Charlottesville; Virginia Military

Institute, Lexington; William and Mary College, Williamsburg; Virginia Polytechnic Institute, Blacksburg; four female normal schools (at Farmville, Radford, Harrisonburg and Fredericksburg). In addition to these are Washington and Lee University located at Lexington, and colleges founded by religious denominations, as follows: Randolph-Macon College for men, Ashland; for women, Lynchburg; Hampden-Sidney College, near Farmville; Emory and Henry, at Emory; Richmond College (coeducational), Richmond; Roanoke College (coeducational), Salem; Bridgewater College, Bridgewater, and Lynchburg College (formerly Virginia Christian College), Lynchburg. Hollins College, at Hollins, Martha Washington College, Abingdon, and Sweet Briar College, Sweet Briar, are institutions for the higher education of women, as is Westhampton College, Richmond, co-ordinate with Richmond College. The Miller Manual Labor School in Albemarle County is an industrial school for orphans and half orphans, and Blue Ridge Industrial School for mountain boys and girls. There are law schools at the University of Virginia, Washington and Lee University and Richmond College, and for medical education a school at the University of Virginia, Charlottesville, and the Medical College of Virginia, Richmond; theological seminaries for white students at Richmond and Alexandria, and for colored at Richmond, Lynchburg and Petersburg. For the higher education of colored students are the Hampton Normal and Agricultural Institute, at Hampton, and the Viriginia Normal and Industrial Institute at Petersburg.

Religion.— The total number of communicants or members of churches in Virginia in 1906 was 793,546. In numerical strength the 10 largest denominations stood in the following order: Baptist, Methodist, Presbyterian, Roman Catholic, Protestant Episcopal, Disciples or Christian, Lutheran, Dunkers or German Baptists, Christian (Christian connection) and United Brethren. There were 5,965 Sunday schools, with 50,226 officers and teachers and 430,452 scholars.

Population.— In 1790 the population of Virginia was 747,610; 1800, 880,200; 1810, 974,600; 1820, 1,065,116; 1830, 1,211,405; 1850, 1,421,661; 1860, 1,596,318; 1870, 1,225,163; 1880, 1,512,565; 1890, 1,655,980; 1900, 1,854,184; 1910, 2,061,612. The population (1910) was divided by sex and race as follows: Male 1,035,348; female 1,026,264; white 1,389,809; negro 671,096; Asiatic 168; Indian 539. There were 27,057 of foreign birth, of whom 3,687 were English, 2,450 Irish, 4,228 German, 4,379 Russian and 1,246 Scotch. The United States Bureau of the Census estimates Virginia's population was 2,213,025 on 1 July 1917. The population of the chief cities by that estimate was — Richmond, 158,702; Norfolk, 91,146; Roanoke, 46,282; Portsmouth, 40,693; Lynchburg, 33,497.

Colonial History.— Herjulfsen, a Norseman, sailing the Greenland Sea, and stormdriven westward to the coast of Labrador, was the first European to see the shores of North America. He was incurious, and did not land. Lief Ericsen, 15 years later (A.D. 1001), landed in 41½° N. lat., well within the patent of Virginia territory which James I granted to the London Company six centuries later. For 300 years these prowlers of the sea occasionally visited the northern shores of the continent, sailed away and left no trace. The greatest date in the annals of discovery is 1492, the year the Italian, Christopher Columbus, commissioned by the royal pair of Spain, reached the Western World. Thereafter the Spanish had no part in the new country soon to be called Virginia, and the English entered upon the scene, led by a Venetian-born sailor, Cabot, and by a sure instinct for colonizing and possessing. They claimed all the continent from the Spanish possessions on the south to the French on the north. This vast territory was the original Virginia, the first of the American colonies settled by the English. Jamestown, on the James River, was founded 13 May 1607 by 105 colonists sent out by the London Company, to whom James I had granted South Virginia, as it was then called in distinction from the territory to the northward, named North Virginia. The colonists were mostly worthless adventurers; Wingfield, the president of the colony, proved dishonest, and the whole enterprise was only saved from a disastrous end by the courage and energy of Capt. John Smith. (See SMITH, JOHN). In 1609 the London Company was reorganized and received a grant of territory extending 200 miles north, and the same distance south of Old Point Comfort, and westward to the Pacific. The government council was superseded by a governor to be appointed by the company's council in England, and to have the sole superintendence of local affairs. Lord Delaware was appointed governor, Sir Thomas Gates lieutenant-governor, Sir George Somers admiral, Christopher Newport vice-admiral and Sir Thomas Dale, high marshal, all for life. Nine vessels with 500 colonists, including 20 women and children, set sail at once. Gates, Somers and Newport accompanied the fleet, but the governor was detained for some time in England by his private affairs. The three officers all embarked in the same vessel and were cast ashore on one of the Bermudas; one of the other vessels was lost, but the remaining seven arrived in safety in the James River. The old government was abrogated, but none of the officers of the new one having arrived, Smith retained the government, as the charter authorized him to do, but the new colonists, like the old, were mostly a profligate set of adventurers, whose whole study seemed to be to create disturbances. Smith was soon after severely wounded by an accident and obliged to return to England for surgical aid, and left a colony of 500 persons well supplied with arms, provisions and goods for traffic with the Indians, and provided with a fort, church, storehouse and 60 dwellings and a good stock of domestic animals. After his departure the colonists gave themselves up to riot and idleness, and a party of 30 seized a vessel belonging to the colony and sailed away as pirates. Six months after Smith's departure only 60 colonists remained. At this juncture Newport, Gates and Somers, with 150 men arrived from the Bermudas in vessels which they had built there. Finding the condition of things at Jamestown, they resolved to abandon Virginia and sail with the remnant of the colonists to Newfoundland to seek food and a passage home from the fishermen. As they descended the river (10 June 1610) they met Lord Delaware, who had just arrived from

England, bringing supplies and colonists. He persuaded them to return to Jamestown, took measures for procuring supplies, established a trading-post at Hampton at the entrance to James River, and punished the Indians for their barbarities toward the colonists by attacking and burning several of their villages. His health failing, he returned to England, leaving Captain Percy as his deputy. He was soon superseded by Sir Thomas Dale, who arrived with 300 settlers and some cattle. Under Dale property, theretofore held in common, was divided among the colonists. The right of property in land in America was then first recognized. He was followed in the governor's office by Sir Thomas Gates, who brought 350 more colonists. New settlements were commenced at Henrico, some distance above Jamestown, and at the junction of the Appomattox and the James, then called New Bermuda. The laws made for the colony were harsh and strict, and occasioned much dissatisfaction. In 1616 Dale, who had resumed the government of the colony at the departure of Gates, returned to England, and soon after Captain Argall was appointed deputy-governor. He used his office so much to the distress of the colonists that Lord Delaware sailed from England to resume his duties, but died on his passage, at the mouth of the bay which bears his name. George Yeardley now appointed governor (1619) and knighted, deserves to rank as the first American Democrat. He called the first legislative body ever constituted in Virginia to meet at Jamestown on 30 July 1619. Its membership was composed of two elected representatives from each of 11 boroughs of the colony. This house of burgesses was the first act in the long drama of self-government in Virginia.

Twelve hundred colonists were sent over during this year, among whom were 90 respectable young women, who were disposed of to the planters as wives at the cost of their passage. Among the new colonists were 100 sent by the king's special order from the prisons, to be sold as servants to the planters. This was the first instance in which felons had been sent to a British colony, and despite the protests of the colonists they continued to be sent in increasing numbers to Virginia for 100 years. In 1619 a Dutch trading vessel brought to Jamestown 20 negroes, who were sold as slaves for life. The number did not much increase for the next 40 years, being limited to a few cargoes brought in by Dutch traders. More settlers arriving, new plantations were established on the York, James and Potomac rivers, and on the eastern shore of the Chesapeake Bay.

In 1622 occurred a bloody war between the colonists and the Indian tribes led by Opechancanough, the brother and successor of Powhatan. On the night of 22 March 350 persons were massacred, and in a brief period Indian murders, sickness and famine reduced the number of the colonists from 4,000 to 2,500. In 1624 the London Company was dissolved and the colony passed under the direct charge of the Crown, except during the period of the Commonwealth, 1649–60. Its condition at this time was not prosperous, tobacco being the only article of export which paid a profit. In 1630 a fort was built at Point Comfort and salt works were established at Accomac. In 1632 the laws of the colony were revised and consolidated, and, though occasionally troubled by the Indians, and by vicious and vagabond colonists, it seems to have maintained a fair share of prosperity for a number of years. In 1641 Sir William Berkeley became governor, and being a staunch loyalist soon came into collision with the parliament. The colony remained firm in its adherence to the Stuarts till March 1652, when an English fleet which had been sent to Barbadoes to reduce that island to submission visited the Chesapeake and arranged terms of capitulation with the loyalists; and Berkeley's commission being declared void, Richard Bennet, a Puritan settler in Maryland, was elected governor. On the restoration of Charles II, Sir William Berkeley returned and was elected governor. The right of suffrage, which had been almost universal during the protectorate, was limited by act of 1670 to freeholders and householders, not so much from the pressure of the royal authority as from the aristocratic views of the prominent planters. The code of the colony was again revised in 1662 and the Church of England re-established and severe laws were passed against "nonconformists, Quakers and Anabaptists." The rapacity of the courtiers of Charles II, upon two of whom, Arlington and Culpeper, he had bestowed a patent of the Virginia colony, and the heavy taxation encouraged for his own purposes by Sir William Berkeley, led to great discontent, which in 1676, on the occasion of a levy of fresh taxes to provide against a threatened attack from the Indians, culminated in what is known as "Bacon's rebellion." (See BACON, NATHANIEL). Berkeley met with large pecuniary losses in this rebellion and when it was fairly quelled he was so relentless in his vengeance on all who had participated in it as to bring down upon himself the royal displeasure. In the winter of 1677 he visited England to justify his conduct, but died before having an interview with the king. Lord Culpeper was then governor for a time and was followed by Lord Howard of Effingham, both rapacious and greedy. In 1689 the colonial government reluctantly proclaimed William and Mary. In 1705 the fifth colonial revision of the code took place. By it the slave was declared real estate, and thus, like the Russian serf, attached to the soil. This provision remained in force while Virginia continued a colony. In 1698 Williamsburg, founded and named in honor of William III, became the capital of the colony. In 1754 hostilities broke out with the French, who had built a line of military posts along the western slope of the Alleghenies and at the headwaters of the Ohio; and in this war George Washington first entered the service of his country, commanding the colonial troops at the battle of Fort Necessity (1754), and being placed at the head of the Virginia forces after Braddock's defeat in 1755. The assertion by Parliament in 1764 of the right to tax the colonies without their consent called forth an earnest petition, memorial and remonstrance from the Virginia house of burgesses in December of that year; and the stamp, mutiny and quartering acts passed by Parliament in 1765 led to the adoption of resolutions denying the right of any foreign body to levy taxes upon the colony.

In the first colonial Congress, which met in New York 7 Oct. 1765, Virginia was not represented, her legislature having adjourned before the issuing of the Massachusetts circular; but

its action was approved at the next session of the legislature. The passing of Townshend's measures of indirect taxation by Parliament produced a remonstrance on the part of the Virginia legislature and a renewed assertion of their exclusive right of self-taxation and of trial by a jury of the vicinage. The name of Thomas Jefferson appears for the first time in connection with these resolutions, which were passed 16 May 1769. Lord Botetourt, the royal governor, at once dissolved the assembly, but its members in their private capacity met and entered into a non-importation agreement, which was very generally signed by the merchants and planters of the colony. The commerce of Virginia with Great Britain was at this time larger than that of any other colony. In March 1773 the house of burgesses, under the zealous advocacy of Patrick Henry, Jefferson and R. H. Lee, appointed a committee "to obtain the most clear and authentic intelligence of all such acts of the Parliament or ministry as might affect the rights of the colonies"; and the same committee were authorized to open a correspondence and communication with the other colonies. On the passing of these resolutions Lord Dunmore, the newly appointed governor, dissolved the assembly. In the autumn of 1774 a conflict occurred between the Indians under Logan, Cornstalk and other chiefs and a Virginia force of about 1,200 men, at Port Pleasant, on the Ohio River. The Indians were defeated, but the Virginians had 60 or 70 killed and a large number wounded. The Virginia convention which met at Richmond 20 March 1775 to appoint delegates to the new Continental Congress, took measures for enrolling companies of volunteers in each county. On 21 April Governor Dunmore ordered the powder belonging to the province to be taken from the public store at Williamsburg and placed on board an armed vessel in the river. Learning this, Patrick Henry collected some companies of volunteers, marched upon Williamsburg and compelled the king's receiver to give bills for the value of the powder taken away. On 23 November Lord Dunmore with a British and Tory force took possession of Norfolk. He was driven from it 3 December, but, in January 1776, returned with a larger force and bombarded it. He continued a predatory warfare along the whole Virginia coast through the ensuing summer, but was finally driven southward. The Declaration of Independence was proposed in the Continental Congress by the Virginia delegates under instructions from the convention of the colony. In the summer of 1779 the British General Matthews made a descent upon the coast, destroyed Norfolk, took Portsmouth and Gosport, destroying the vessels of war building there, and burned or took 130 merchant vessels on the James and Elizabeth rivers. In January 1781 Gen. Benedict Arnold captured and burned Richmond, then a village of 1,800 inhabitants; but being pressed by the militia under General Steuben and some French frigates in the Chesapeake, he was forced to escape with a few prizes to Newport, R. I. In the spring and early summer of the same year Cornwallis and Phillips plundered the greater part of eastern Virginia, seizing and destroying property to the value of not less than $10,000,000. The surrender of Cornwallis at Yorktown on 19 Oct. 1781 virtually closed the war.

State History.— Independence won, the arts of peace took the place of war's strategy. The first achievements of statesmanship in Virginia were the bill exempting dissenters from tribute to the established church, the statute for religious freedom (1785) and the act abolishing primogeniture. There was also prompt response to the new Commonwealth's Federal obligations. To hasten the ratification of the Articles of the Confederation of the Union, Virginia ceded to the general government her vast territory northwest of the Ohio. Her statesmen realized that the Articles under which the colonies had achieved their independence were not suited to accomplish a union of States and were the first to call a convention to remodel the government. In September 1786 the convention met at Annapolis to "consider the subject of a national convention," but only a minority of the States were present and it adjourned to give place to a fuller convention, which assembled in Philadelphia in May 1787 when every State but Rhode Island was represented. Virginia's members were George Washington, John Blair, James Madison, George Mason, James McClurg, Edmund Randolph and George Wythe. Washington was elected president. In September a committee reported the document which became the Constitution of the United States. The Virginia Convention, called to ratify the compact, met in Richmond in June 1788 with Marshall, Madison, Monroe, Mason, Nicholas, Henry, Randolph, Pendleton, Lee, Washington, Wythe, Innes, Bland and Grayson in the membership.

The alien and sedition laws, which Congress passed during the Adams administration, were aimed at troublesome French emissaries and authorized the punishment of all such aliens as the President should judge dangerous to the peace and safety of the United States. Virginia statesmen, led by Jefferson, regarded these enactments as a dangerous invasion of the liberty of the citizens of the States, for in their strict interpretation of the Constitution each party to the Federal compact had "an equal right to judge for itself as well of infractions as of the mode and measure of redress." The famous "Resolutions of '98–'99," written by Jefferson, were the first formal expression of the principle of states-rights and the policy of a strict and narrow construing of the Constitution. For many years after the adoption of the Federal Constitution Virginia maintained a predominant influence in the affairs of the nation; of the first five Presidents, four were natives and residents of that State, and each of them was re-elected for a second term; and since that period four other natives of the State, one of them at the time of his incumbency a resident of it, have filled that high office.

In the convention which met in Richmond in 1829 to revise the State constitution sat many distinguished statesmen, among them Madison, Monroe, John Marshall and John Randolph of Roanoke. The Constitution enacted by the Convention of 1829–30 was revised in 1850, the 1850 Constitution in 1882 and that in 1901–02. The successive changes register, in a measure, the development of the State in a material way, and, much more truthfully, the evolution of its spirit and ideals.

At the time of the secession of the Southern

States at the close of 1860 and beginning of 1861, a majority of the people of Virginia were strongly attached to the Union, but they also sympathized with the seceding States. At an extra session the legislature passed a bill (23 Jan. 1861) appropriating $1,000,000 for the defense of the State and issued a call for a convention, the members of which were to be elected 4 Feb. 1861. The number of delegates elected to the State Convention was 152, of whom the greater part were "conditional" Union men, a few in favor of immediate secession, and about as many unconditional Unionists. The convention met at Richmond 13 February and on 10 March the committee on Federal relations submitted several reports. The majority report, composed of 14 resolutions, avowed the doctrine of State rights, condemned all interference with slavery as dangerous, asserted the right of secession and defined the circumstances under which Virginia would be justified in exercising that right, viz., the failure to procure such guaranties from the Northern States as she demanded, the adoption of a warlike policy by the general government or the attempt to exact payment of duties from the seceded States, or to reinforce or recapture the forts. The majority resolutions were discussed and adopted as far as the 13th, when the capture of Fort Sumter by the Southern forces and the consequent proclamation of the President calling for troops, led to the passing on 17 April of an ordinance of secession by a vote of 88 yeas to 55 nays. Twelve of those voting nay were not long after expelled from the convention. The people of the State had by a majority of 52,857 required that the action of the convention should be submitted to their decision and a vote on the ordinance of secession was accordingly ordered to take place on the fourth Thursday of May. The State government, however, proceeded as if the ordinance had already been ratified by the people. The Federal flags were removed, troops to the number of 10,000 were called out by the governor, and loans effected for their arming and equipment; and on 25 April the convention passed an act for the adoption of the constitution of the provisional government of the Confederate States of America. The State convention on 29 April appointed delegates to the Confederate congress and invited that congress to make Richmond the seat of government of the Southern Confederacy; an invitation which was accepted soon afterward. The popular vote was taken as provided in the ordinance 23 May and resulted in a majority of 94,000 in favor of the secession ordinance. Eastern Virginia voted almost unanimously for it, while the western counties were as unanimous against it. The convention of western Virginia, representing about 40 counties, met at Wheeling on 11 June, passed a declaration of independence from the action of the State convention, declared vacant the offices held by all State officers acting in hostility to the Federal government, and took measures for the establishment of a provisional government. Virginia was the centre of the war zone in the East and became the scene of some of the most important battles of the Civil War (q.v.), among them being the two battles of Bull Run, Winchester, Fredericksburg, Chancellorsville, the Peninsular campaign and the battles of the Wilderness campaign. Virginia troops throughout the conflict played a valuable part. The military operations in Virginia were distinguished by desperate fighting and this is particularly true of the warfare north of the Rappahannock. Richmond was the strategic capital of the Confederacy. The Federal forces came to occupy the greater part of the State; and the customary effects of war were seen in the desolation of the country. Every section was invaded and at the time of the surrender at Appomattox Court House (9 April 1865), the Confederate army and civilians were threatened with famine. General Lee, commander-in-chief of the military forces of the Confederate States, and "Stonewall" Jackson and J. E. Johnston, commanders of Confederate armies, were all Virginians.

The Civil War was the last notable event in connection with the history of Virginia. Since that time there have been numerous political difficulties. The Reconstruction acts granted to negroes the right of voting for delegates to a State convention. In 1868 a new constitution was adopted. Among various new features therein embodied was that of negro suffrage. There was much dislike of the new instrument, which was not submitted to popular vote until July 1869, when it was adopted by a large majority, though the clause disfranchising Confederate officials and demanding an oath of past loyalty was rejected. G. C. Walker was elected governor; United States senators were also chosen, the 14th and 15th amendments were ratified and the military occupation, never required, was brought to an end. On 26 Jan. 1870 Virginia was readmitted to the Union. There was soon trouble in connection with legislation respecting the State debt. By a bill passed in 1871 two-thirds of the debt of Virginia was funded into bonds, the coupons of said bonds to be held receivable in payment for taxes assessed. The remaining one-third was held to be the suitable share of West Virginia, though the latter State refused to admit such obligation. In 1872 the Virginia State legislature repealed the tax-coupon arrangement of the law; but the courts decided that the State was under obligation to receive the bonds, even should the treasury be thereby kept bankrupt. At that time $17,000,000 in these bonds had been funded. Attempts toward a compromise were made and conflicts between Federal and State courts were frequent. In 1891–92 a settlement was finally arrived at. The bondholders received for bonds and coupons amounting to $23,000,000 the sum of $19,000,000 in new century bonds. During the period of discussion regarding the State debt, politics was much affected by the question; a "Readjuster" party was formed, finally absorbed by the Republican, and elections were based on the matter. The negro vote was divided. A constitutional convention, held in 1901–02, had as its chief objects in view the restriction of the suffrage and financial retrenchment. The new constitution was proclaimed 19 May 1902 but was not submitted to popular vote. Virginia has been throughout almost steadily Democratic in Federal politics. In 1860 it voted for John Bell, the Constitutional Union nominee, and in 1872 for Grant; but otherwise it has consistently supported the Democratic national candidates. In 1881 the 100th anniversary of the surrender of Lord Cornwallis to Washington at Yorktown was celebrated by the

laying there of the corner-stone of a national memorial (18 October). At the time of the Spanish-American War in 1898 an extensive military camp, Camp Alger, was established and maintained near Falls Church, Fairfax County.

GOVERNORS OF VIRGINIA.

	STATE	
Patrick Henry		1776–79
Thomas Jefferson		1779–81
Thomas Nelson, Jr		1781
Benjamin Harrison		1781–84
Patrick Henry		1784–86
Edmund Randolph		1786–88
Beverley Randolph		1788–91
Henry Lee		1791–94
Robert Brooke		1794–96
James Wood	Democratic-Republican	1796–99
James Monroe	" "	1799–1802
John Page	" "	1802–05
William H. Cabell	" "	1805–08
John Tyler, Sr	" "	1808–11
James Monroe	" "	1811
George William Smith (act'g)	Dem.-Republican (1 mo.)	1811
Peyton Randolph (acting)	(1 week)	1811–12
James Barbour		1812–14
Wilson Cary Nicholas	Republican	1814–16
James Patton Preston	"	1816–19
Thos. Mann Randolph	"	1819–22
James Pleasants, Jr	"	1822–25
John Tyler		1825–27
William B. Giles		1827–30
John Floyd	Democrat	1830–34
Littleton Waller Tazewell	"	1834–36
Wyndham Roberton (acting)	"	1836–37
David Campbell		1837–40
Thomas W. Gilmer	Whig	1840–41
John M. Patton (acting)	"	1841
John Rutherford (acting)	"	1841–42
John Munford Gregory (acting)	"	1842–43
James McDowell	"	1843–46
William Smith	Democrat	1846–49
John Buchanan Floyd	"	1849–52
Joseph Johnson	"	1852–56
Henry Alexander Wise	"	1856–60
John Letcher	"	1860–64
William Smith	"	1864–65
Francis H. Pierpont	Provisional (Republican)	1865–68
Henry H. Wells	Provisional	1868–69
Gilbert C. Walker	Provisional (Republican)	1869–70
" "	Governor	1870–74
James Lawson Kemper		1874–78
Frederick W. M. Holliday		1878–82
William Ewan Cameron		1882–86
Fitzhugh Lee		1886–90
Philip W. McKinney		1890–94
Charles T. O'Ferrall		1894–98
J. Hoge Tyler		1898–1902
Andrew Jackson Montague		1902–06
Claude A. Swanson		1906–10
William Hodges Mann		1910–14
Henry Carter Stuart		1914–18
Westmoreland Davis		1918–

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JOHN S. PATTON,
Librarian, Library of the University of Virginia.

VIRGINIA, Ill., city, county-seat of Cass County, on the Chicago, and Eastern Illinois, and the Baltimore and Ohio railroads, about 30 miles west by north of Springfield. It is in a rich farming section and the chief industries are connected with farming and dairying. The city has a high school, elementary schools and the library of the Central Illinois Science Society. There are good banking facilities and two weekly newspapers. Pop. about 1,501.

VIRGINIA, The Restored (or Reorganized) Government of. An irregular government whose legitimist pretenses were recognized by the United States government in the crisis of the Civil War. Its most useful achievement was the erection of West Virginia, and its other chief interest was its service as a forerunner of reconstruction in Virginia. The passage of the Ordinance of Secession by the Virginia Convention at Richmond (on 17 April 1861) was solidly opposed by the delegates of the northwest counties who immediately began a movement for separate action in favor of the Union under the Constitution, resulting in a preliminary anti-secession convention at Wheeling, in May 1861, and a second convention which met at the same place in June and, acting under the right of revolution, declared vacant the offices held by the secessionists of the east, elected new officers and reorganized the government under the name "Restored" or "Reorganized" government of Virginia.

This reorganized government, whose validity was acknowledged by President Lincoln, and which was represented by Francis Harrison Pierpont, acting as governor, entirely ignored the existence of the legal State government at Richmond. Its first general assembly, composed largely of former members of the Virginia legislature, promptly took vigorous action against confederates of the western counties, declared the proceedings of the Virginia secession convention null and void, and finally (August 1861) took the last step of alienation from Virginia by an act providing for the formation of a new State and the call of a convention to form a constitution for it. In May 1862 it gave the consent of Virginia to the formation of the new State from Virginia territory. After the organization of the new State of West Virginia had been completed — by formation of a new government, approval of its constitution by Congress and proclamation of the President — the "Restored" government of Virginia folded its tents and moved to Alexandria, where its jurisdiction, reduced to a small strip of territory within the Union lines, existed only in the shadow of the Federal armies. Here under its re-elected governor (Pierpont) and its tiny legislature, and recognized by the Lincoln government at Washington, it continued to exist throughout the period of the Civil War, its chief work being the framing of a new Virginia constitution expressing the Union sentiments of its Potomac legislators. At the close of the war, in May 1865, with its validity recognized by President Johnson, it moved to

Richmond and remained the government of Virginia until April 1867 when, by an order of General Schofield, Governor Pierpont was replaced by General Henry H. Wells. Consult Callahan, J. M., 'Semi-Centennial History of West Virginia' (1913); Eckenrode, H. J., 'Political History of Virginia during the Reconstruction' (1904).

JAMES M. CALLAHAN.

VIRGINIA, University of, the State university located at Charlottesville, Va. As early as 1779 Thomas Jefferson presented to the Virginia assembly his plans for public education, which included a university. This scheme was not, however, immediately carried out; and after 1814 Jefferson devoted himself largely to the work of founding a university in accordance with his ideal. It was finally established by act of the State legislature in 1819; and was first opened to students in 1825. From 1850 to 1861 was a time of especial prosperity and large attendance; during the war the college suffered a large loss of students, but nevertheless continued in session; after that its work continued successfully with gradually increasing attendance. In 1895 the Rotunda, Annex and some adjacent smaller buildings were destroyed by fire, but the Rotunda, restored exactly and three other large buildings were formally opened in 1898. Since this several other important buildings have been added. The government of the university is vested in a board of visitors of nine members appointed by the governor with the approval of the senate for terms of four years. The organization of the university comprises five departments: (1) The Academic Department; (2) the Department of Engineering; (3) the Department of Agriculture; (4) the Department of Law; (5) the Department of Medicine. The work in these departments is grouped in 22 distinct schools, each offering an independent course, under the direction of the professors who are responsible to the board of visitors alone for their work. The work in the Academic Department is entirely elective; the courses are arranged in seven groups from each of which one course must be elected; the other courses required may be elected from these seven, or from an eighth, including courses in law, medicine, engineering, etc. The degree of B.A. is conferred for the completion of 10 undergraduate courses chosen from the eight groups; the degrees of M.A. and Ph.D. are conferred for graduate work, suitable graduate courses being offered in each school. The Department of Engineering offers four courses leading respectively to a degree in civil, mining, mechanical and electrical engineering; the degrees conferred are civil engineer, mining engineer, machanical engineer and electrical engineer. The faculty numbers 70; the average annual attendance of students is over 770. The students maintain an athletic association, having charge of athletic sports, two literary societies, several department and graduate societies and a Young Men's Christian Association. The original buildings of the university were planned by Jefferson and are purely classic in style; the more recent additions have been made to harmonize with and complete his plan. The central group encloses a quadrangle, 1,000 feet in length and 300 feet wide. The dominant structure of this group is the Rotunda, the library building at the north end, modeled from the Roman Pantheon; other buildings around the quadrangle are the main academic building, the physical laboratory, the mechanical laboratory and original buildings designed by Jefferson. Parallel with the latter are the eastern and western "ranges" of dormitories; outside the quadrangle group are the chapel, the natural history museum, the chemical laboratory, the medical building, the observatory, the infirmary, several dormitories and the gymnasium. The campus also contains an athletic park, recently laid out, comprising 21 acres. Tuition in the Academic and Agricultural departments is free to Virginia students; the university awards scholarships to accredited schools; and there are several alumni scholarships, and a number of special scholarships. The general library contains over 90,000 volumes; and in addition there are law and other departmental libraries.

VIRGINIA CITY, Nev., city, county-seat of Storey County, on the Virginia and Truckee Railroad, about 200 miles northeast of San Francisco, and 21 miles northeast of Carson City. It is on the eastern side of Mount Davidson, about 7,825 feet above the level of the sea. It was settled in 1859, when the famous Comstock Lode was discovered and chartered as a city in 1864. Mines under the city have produced nearly $400,000,000 in gold and silver bullion. There is still considerable silver mining in the vicinity. The city has a daily supply of 10,000,000 gallons of water for use for domestic and mining purposes, brought from the Sierra Nevada Mountains, 30 miles west, at a cost of $2,500,000.. The principal mines are drained by the Sutro tunnel (4 miles long, cost $4,500,000) at a depth of 1,650 feet. The deepest mining works have a depth of 3,300 feet. Numerous great mining plants have been erected in the city at a cost of from $350,000 to $1,000,000 each. The city has gas and electric light plants and a daily newspaper. The Miners' Union Library, the courthouse, churches and schools are the principal buildings. The population has decreased from 10,900 in 1880 to 2,244 in 1910, a fact mainly due to the decline in the price of silver.

VIRGINIA CONVENTIONS OF THE REVOLUTION, The. The change from colony to commonwealth in Virginia was made by means of five conventions, called together between 1774 and 1776. These conventions are important not only as marking the transition of this ancient colony to statehood, but also because they greatly influenced the course of continental or national affairs. For example, they had to do with the summoning of the First Continental Congress, and with the appointment of delegates thereto so decisive as Peyton Randolph (its first president), George Washington and Patrick Henry. The constitutional principles formulated by these conventions, especially by the one in 1776, which drafted the Virginia constitution, were later built into the Federal structure.

First Convention (1 Aug. 1774).— The circumstances which led to the calling of the first Virginia convention were as follows: During the session of the House of Burgesses, as the popular branch of the colonial legislature was called, news arrived from Boston of the

decision upon the part of the British ministry to close that port as a punishment for the destruction of the famous tea. The indignation felt upon every hand in Virginia headed up in a resolution, passed on Tuesday, 24 May, to appoint the first day of June as a day of fasting and prayer to God to avert this doom from Boston. As soon as this action of the legislature became known to the royal governor, Lord Dunmore, he in high dudgeon dissolved the House of Burgesses. The following Sunday afternoon, when only a score or so of the late burgesses remained in the sleepy little capital of Williamsburg, a messenger arrived from Boston, bringing a circular letter, appealing to the colonies for united support, and advocating the cessation of all trade with Great Britain. The responsibility for a final answer to this appeal from Boston was too grave for the Committee of Correspondence at Williamsburg to assume alone. After consultation, it was decided the next morning at a meeting of the 25 burgesses remaining in town, to ask the counties to appoint deputies to a convention, which should consider the question of the cessation of all trade relations with Britain, and should select delegates to the proposed Continental Congress. The time named for this convention was 1 August, and the place Williamsburg. This summons, the original of which is in the Virginia State Library, was evidently written by Peyton Randolph, the moderator, whose name stands first in the list of signers. Then follow the names of Thomas Jefferson, George Washington, Henry Lee, etc. This call for a Virginia Convention has the same significance in the progress of the Virginia Revolution as the meeting of the *Tiers-Etat* in the Versailles Tennis Court, 15 years later, in the French Revolution. It was in both instances an assertion of the sovereignty of the people over against the prerogative of the Crown. Sympathy for Boston in its sufferings had called forth in Virginia the representatives of the sovereign people, whom royal writs did not summon nor royal governors dissolve. The first Virginia Convention met in Williamsburg, on 1 Aug. 1774, and remained in session six days. Fifty-six counties and four boroughs were represented; the counties by two delegates each and the boroughs by one each. Peyton Randolph, the former speaker of the House of Burgesses, was made president. Delegates were chosen to represent Virginia in a General Congress, namely, Peyton Randolph, George Washington, Richard Bland, Benjamin Harrison and Edmund Pendleton. In support of Boston, it was agreed to buy no goods, except medicines, from Great Britain, after 1 November; and neither to import slaves nor purchase slaves imported, after that date, from any place whatsoever. The delegates further declared that unless American grievances were redressed by 10 Aug. 1775, they would stop all exports of their produce to Britain. Provision was made for future sessions of the convention should the condition of the country demand. This meeting was also the means of making known to the public Thomas Jefferson's paper, afterward entitled "A Summary View of the Rights of British America," a forerunner of the Declaration of Independence. For the proceedings of this convention, consult the files of the *Virginia Gazette*, 4–11 Aug. 1774.

Second Convention (30 March 1775).— The second Virginia convention was held at Richmond, 20 to 27 March 1775. It sat in Saint John's Church, which crowns an eminence overlooking the valley of the James. The historic church is still used as a house of worship, the spot being indicated where Patrick Henry stood as he made the famous speech in favor of arming the colony. The members were grouped into two parties, the one conservative, deprecating radical measures and relying still upon reconciliation with Great Britain; the other aggressive, believing that pacific means had been exhausted, and urging that the colony be armed. Peyton Randolph, the president, was the leader of the former group. Patrick Henry was the mouthpiece of the latter. For three days neither party committed itself. But upon the fourth day a resolution was adopted, thanking the Assembly of Jamaica for its memorial to the king in behalf of the American colonies, and expressing an ardent desire for peace. This seemed to Patrick Henry to savor of servility. He thereupon brought forward his famous resolution for putting the colony in a condition of defense, asserting that "a well-regulated militia, composed of gentlemen and yeomen, is the natural strength and security of a free government." Despite opposition this resolution was carried, chiefly by the passionate eloquence of Henry, and the military resources of the colony were at once directed to be organized and made efficient. The convention appealed to the people for contributions for the relief of the inhabitants of Boston, "suffering in the common cause of American freedom." The former delegates to Congress were re-elected, Thomas Jefferson being made alternate for Peyton Randolph, in case the latter could not attend. The people were asked to choose delegates to represent them in convention for one year.

Third Convention (17 July 1775).— Meantime, events moved rapidly. The battles of Lexington and Bunker Hill, the session of the Second Congress at Philadelphia, Lord Dunmore's seizure of the powder in the magazine at Williamsburg and his subsequent escape to a British man-of-war lying at Yorktown, had wrought the mind of the patriots to a high state of excitement. The governor threatened the colony with fire and sword. Such were the circumstances under which the third convention met at Richmond, on 17 July 1775. Some changes of consequence had occurred in the membership of the body. Fifteen days before the planters came together at Richmond, George Washington had taken command, under the old elm at Cambridge, of the American army. His place as a delegate was taken by his neighbor, George Mason, whose mind for the next year was to be engaged in the constructive work of the Virginia Commonwealth. For nearly a month, the convention suffered more or less distraction, owing to the absence in Congress of such experienced leaders as Henry, Jefferson and R. H. Lee. The legal status and methods of this body differed materially from those of the previous conventions. Both the outward circumstances of the colony and the inner movement of thought strengthened the hands of the delegates and forced the convention to assume responsi-

bilities undreamt of by the score of ex-burgesses who had suggested the calling of the first convention. Lord Dunmore had fled. The royal government was dissolved. The convention was driven to meet this new turn in affairs. No longer content with resolutions, it followed legislative methods and gave to its acts the forms of law, terming them ordinances. One hundred and fifteen delegates were present. The leading measures acted upon by this convention were, to organize the military forces for the defense of the colony, to create an executive organ to act during the recess of the convention, to provide adequate revenue for the provisional government and army of the colony, to establish executive county committees, to regulate the election of delegates to the convention and to elect new representatives to Congress. As the bare enumeration shows, these were tasks of no little difficulty. Interest attaches to the slip of paper (in the Virginia State Library) upon which the tellers made their report of the ballots for representatives for Congress: «Peyton Randolph 89, Richard Henry Lee 88, Thos. Jefferson 85, Benj. Harrison 83, Thos. Nelson 66, Richard Bland 61, George Wythe 58,» etc. A representative in Congress «shall be allowed for every day he may attend therein the sum of 45 shillings,» which sum was reduced by the convention the following year to 30 shillings per day, to be paid by the treasurer of the colony. The Committee of Correspondence was converted into the Committee of Safety, which directed, during the recess of the convention, both the military and civil affairs of the nascent State. On 17 Aug. 1775 the first Committee of Safety, consisting of 11, was elected, the tellers on this occasion being Richard Henry Lee, Thomas Jefferson, Benjamin Harrison and Patrick Henry. The convention adjourned 26 Aug. 1775.

Fourth Convention (1 Dec. 1775).—The fourth convention met at Richmond 1 Dec. 1775, but, after organizing, removed to Williamsburg. As Peyton Randolph, who had signally served as speaker of the House of Burgesses, president of three previous Virginia conventions and president of the first two Congresses, had died in Philadelphia on 22 Oct. 1775, Edmund Pendleton was chosen president in his place. The chief measures that engaged the attention of this convention were the increase of the army for the defense of the colony (nine regiments, enlisted for two years) against the Tory forces commanded by Lord Dunmore, who held Norfolk and the adjacent region; the establishment of an admiralty court; the appointment of a commission of five men in each county to try the causes of those deemed «enemies of America»; the authorization of the county courts to elect severally a sheriff for one year, and instructions to the Virginia delegates in Congress to urge the opening of the ports of the colonies to the commerce of the world, excepting Great Britain and the British West Indies. The Virginia troops were merged into the Continental army and the superior officers were hereafter commissioned by Congress. The convention adjourned 20 Jan. 1776. While this convention was in session, the Virginia troops routed the forces of Lord Dunmore at Great Bridge 9 Dec. 1775. On 1 Jan. 1776 Dunmore burned Norfolk, the chief town in Virginia, having about 6,000 inhabitants and continued to ravage the coasts until summer. Being dislodged from Gwynn's Island in Chesapeake Bay by Andrew Lewis, he fled to New York and thence to England.

Fifth Convention (6 May 1776).—The growth of the idea of American independence was slow in the Old Dominion. The burning of Norfolk on 1 January and the successes of Washington in the early spring in ousting the British from Boston, precipitated opinion in Virginia. The election of delegates to the May convention took place during April and the two points which constantly recur in the instructions given them are independence and representative government. For instance, the freeholders of Charlotte County, on 23 April 1776 said to their representatives: «We give it in charge to you to use your best endeavors that the delegates which are sent to the General Congress be instructed immediately to cast off the British yoke.» The fifth convention met on 6 May 1776, at Williamsburg, 66 counties and corporations being represented by 131 delegates. Twenty-nine of these were new members, whose selection is perhaps attributable to the increase of religious dissent in the colony. Among the new members were James Madison, recently from Princeton College, and Edmund Randolph, son of the king's late attorney-general, who had taken ship with Lord Dunmore for England. George Mason, owing to sickness, did not take his seat until 18 May, bringing perhaps in his pocket both a declaration of rights and a draft of a constitution for the anticipated commonwealth. The convention was at once a legislative, constituent and executive body. The three great measures of constructive policy which it formulated were: First, the instructions to the Virginia delegates in Congress to propose independence; second, the bill of rights, and third, the constitution of Virginia. Its session lasted 51 days, a brief space, considering the novel and momentous task of organizing a commonwealth. Edmund Randolph tells us that the resolution instructing the delegates in Congress to propose the declaration that "the United States are free and independent States» was «drawn by Mr. Pendleton, proposed by General Nelson, and enforced by Mr. Henry.» The first drafts of the motion for independence in the convention were found some years ago in the Virginia State Library, by William Wirt Henry and may be seen in his 'Life of Patrick Henry.' They were endorsed by the clerk, «Rough Resolutions, Independence.» After the passage on 15 May 1776 of the resolution instructing the delegates in Congress to propose independence of Britain, the British flag was at once struck on the capitol at Williamsburg and the colonial colors hoisted in its stead. At night, the town was illuminated and the people were jubilant. On 27 May, Archibald Cary presented to the convention the «Declaration of Rights,» which had been originally drawn by George Mason. In it the well-known guarantees of personal liberty are admirably stated. It was in the discussion of the articles in this «Declaration» bearing upon religious toleration, that James Madison came forward for the first time, emphasizing the distinction between religious liberty and toleration and contending boldly for an expression of outright religious liberty.

In consequence, the convention declared in the 16th article, that "all men are entitled to the free exercise of religion, according to the dictates of conscience." The "Declaration" thus framed has been the Magna Charta of Virginia, forming an integral part of every constitution since that day. It is the bed-rock of republican government. The original draft of the "Declaration of Rights," in Mason's own handwriting, was presented to the State of Virginia, 15 Feb. 1844, by Gen. John Mason, the last surviving son of George Mason of Gunton Hall. This copy now hangs on the wall of the Virginia State Library. Seven different schemes of government are known to have been before the convention. From these was evolved the first constitution, which was finally adopted on 29 June 1776 — the natal day of the commonwealth of Virginia. This constitution provided for a bicameral legislature, called the House of Delegates and senate, elected by freeholders. The executive was to be a governor, elected annually by the house and senate on joint ballot. He was to be assisted by a privy council, consisting of eight members chosen by the legislature. The judges of the Supreme Court of Appeals, judges of admiralty and attorney-general were elected also by the legislature and continued in office during good behavior. All laws were to originate in the house of delegates, but were, except money bills, amendable by the senate. The convention immediately elected Patrick Henry as governor and Edmund Randolph as attorney-general. The new government went into operation at once. After making provision for an increase of troops and for the vigorous prosecution of the war the convention adjourned on 5 July 1776. The Commonwealth of Virginia was thus launched upon its historic development. See UNITED STATES — FORMATION OF STATE CONSTITUTIONS.

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VIRGINIA CREEPER, a very ornamental American climbing shrub (*Parthenocissus quinquefolia*). It is frequently confounded with poison-ivy and the two plants often grow together; but it should be remembered that the innoxious creeper is distinguished by its leaves, which are not shining and are palmately parted into five divisions, whereas the poison-ivy's leaves have but three leaflets and are glossy. The small, white, five-parted flowers, with spreading petals, are in ample panicles, but are not so conspicuous as the fruits, which consists of dark-blue berries, on red pedicels. They are ripe in autumn and are set off by the rich tones of crimson which the foliage assumes at that season. The Virginia creeper or American ivy or woodbine, as it is variously styled, is one of our most decorative vines. It travels over rocks and fences, sending out delicate trailing branches, with the leaves regularly diminishing in size down to the folded ones near the curving tip. It soon starts climbing by numerous tendrils, which are often tipped with disc-like enlargements that adhere to rough surfaces of walls or trees and is further supported by aerial roots, springing from the stems.

VIRGINIA DEER, QUAIL, etc. See DEER, QUAIL, etc.

VIRGINIA EXPOSITION. See JAMESTOWN, VA.

VIRGINIA FENCE, a rail fence common in the United States and Canada, known also as snake-fence, worm-fence and stake-and-rider fence. It consists of tiers of split rails laid horizontally in a zig-zag manner, the ends resting on each other and generally braced or kept in place by a pair of posts driven slantingly into the ground at the angle formed by the intersection of two tiers.

VIRGINIA MILITARY INSTITUTE, a State school located at Lexington, Va. It was established in 1839 by act of the legislature and opened to students in the same year. It is governed by a board of visitors consisting of the superintendent of public instruction and the adjutant-general, members ex-officio, and nine other members appointed from different sections of the State by the governor with the approval of the senate. In accordance with the laws of Virginia the professors and officers hold commissions in the State militia, and the students are organized as a military corps of cadets. The school played an important part during the Civil War; in April 1861 the cadets were ordered to Richmond, where they took part in drilling volunteers; in 1862 the Institute was reopened, and in May 1864 the cadet corps was ordered out for active service and took a leading part in the battle of New Market, Va. During the war the cadets were in active service 13 months. In June 1864 the buildings and equipment were burned by the Federal army; in October 1865 the Institute was reopened, the buildings and equipment rapidly restored and the course of instruction greatly improved and extended. The regular course covers four years and though largely scientific and technical include some general culture subjects. The work of the first two years is the same for all and includes English, a foreign language, science, mathematics and drawing, none of the courses being elective; at the end of the second year students may elect between courses in civil engineering, applied chemistry and electricity; the degree of B.S. is conferred for the completion of any of these courses. There is also post-graduate work offered leading to the degrees of C.E. or M.S. For military instruction and drill the cadets are organized in a battalion of four companies; the discipline is strict, the regulations being based on those of West Point. Instruction is given in infantry and artillery tactics, ordnance and gunnery, military science and the art of war and military engineering. A certain number of cadets, not less than 50, are admitted each year as State cadets, without charge for tuition or board. The Institute is located outside the city on a hill overlooking Wood's Creek; the new academic building was completed in 1900. The library contains about 15,000 volumes, the students number 375 and the faculty and military staff 25. Since the foundation of the school in 1839 there have been about 7,000 matriculates, of whom 2,500 became full graduates.

VIRGINIA-PENNSYLVANIA BOUNDARY DISPUTE. Several years before the American Revolution the rapid increase of settlements in the transmontane region beyond the western limits of Maryland, and especially along

the waters of the Monongahela, precipitated a bitter boundary dispute which threatened to result in open hostilities in the disputed territory. Virginia — on the basis of certain words of an early charter — claimed territory at least as far north as the 40th parallel, which would have included the "key to the West" at Fort Pitt (now Pittsburgh). Pennsylvania threatened to renew her claim to the line of 39° as originally demanded by the Penns before the establishment of the Mason and Dixon line as the boundary between Maryland and Pennsylvania. In 1773 Governor Dunmore of Virginia, determined to resist the claims of Pennsylvania jurisdiction recently exercised through courts established at Hanna's Town (now Greensburg), sent to Fort Pitt a trusted representative, Dr. John Connolly, who established a rival court and rival magistrates, thus beginning a struggle which was postponed only by the Revolution.

From 1774 to 1780 Virginia courts continued to sit in western Pennsylvania on territory claimed by Pennsylvania. Finally, following negotiations of 1779 an agreement for a survey to establish the boundary was reached in June 1780. A temporary survey was completed in 1781 and a permanent survey, under a joint boundary commission, completed the extension of the "Mason and Dixon" line to the southwest corner of Pennsylvania in 1784, and established the western boundary line of Pennsylvania in 1785–86.

JAMES M. CALLAHAN.

VIRGINIA POLYTECHNIC INSTITUTE, The, located at Blackburg, Montgomery County, Va. It was established as the Virginia Agricultural and Mechanical College by the State of Virginia in 1872, in accordance with the provisions of the Land Grant Act of 1862. (See COLLEGES, LAND GRANT). In the same year it was opened to students. Its name was changed by authority of the legislature in 1896 to Virginia Polytechnic Institute. It is under the control of a board of visitors, consisting of the superintendent of public instruction of the State, the president of the State board of agriculture and immigration, ex-officio members, and eight members appointed by the governor with the approval of the senate. One-half of the eight members are appointed every two years for terms of four years. The Institute offers 15 degree courses, leading to the B.S. degree, and a two-year short course in practical agriculture, a farmers' winter course of one month and in the summer a special course to members of the boys' corn clubs from over the State. The B.S. courses embrace courses in general science, in agriculture, in horticulture, in agricultural engineering, in preparatory veterinary medicine, in applied physics, in applied chemistry, in chemical engineering, in metallurgy and metallography, in applied geology, in applied biology (preparatory course for the study of medicine), in civil engineering, mechanical engineering, electrical engineering and in mining engineering. Graduate work is also offered, looking to the degrees of M.S., C.E., M.E., E.E. and E.M. Each course includes elements of general culture, while in all of the degree courses English, modern languages, mathematics and political science are required. Laboratory practice or practical work in the shops or fields forms an integral part of each course and consumes about one-half of the number of hours. It is readily seen, therefore, that, while the Institute is a technical school, the endeavor is to give well-rounded courses. In addition to the practical work required, students are given the opportunity to pay part of their expenses by manual labor. Instruction in military science and tactics and drill is required of all students. The battalion of cadets consists of five infantry companies, a signal corps, drum corps, staff and band. The State agricultural experiment station, the State entomological work, the State livestock sanitary work and the extension division are departments of the Institute under control of the board of visitors. In addition to the above courses, there have been introduced for the session 1918–19, under the Smith-Hughes Act, courses in agricultural education and industrial education. The president of the Institute is also, by virtue of his office as president, head of these various departments. Under the guidance and by aid of the Institute authorities, extension work in all agricultural subjects and farmers institutes are conducted in various portions of the State. Two literary societies are maintained, each of which occupies a well-furnished hall. The Institute is situated on the crest of the Alleghanies at an elevation of 2,160 feet. The campus contains more than 100 acres and the farm about 450 acres. The plant consists of about 70 buildings, including the shops and farm buildings. The shop building is a new one recently completed, covering approximately one and one-quarter acres of ground, made of stone and reinforced concrete, is thoroughly equipped with most modern machinery and is, in fact, one of the most commodious and up-to-date shops in the East. The library is housed in a large and handsome building of native stone and contains about 28,000 bound volumes and 80,000 pamphlets. The income is derived from the Morrill Act of 1862, the Nelson Act, the Adams Act, the Smith-Lever Act and from the appropriations from the State of Virginia. The faculty of the Institute, including officers, numbers about 65 and the total matriculation of students during the year 1917–18 was 526.

VIRGINIA QUAIL, or COLIN: bird (*Ortyx Virginiana*) of family *Tetraonidæ*, abundant in North America east of the western plains; in some parts commonly known by the name of quail, in others by that of partridge. In size it is intermediate between the common quail and the common partridge of Britain. The prevalent color of the plumage is brownish red, underparts whitish; but all parts are more or less mottled with different colors. The feathers of the head are capable of being erected into a sort of crest. The call of the male is popularly regarded as resembling the words "Bob White," and this name is often given to it. The coveys of the Virginia Quail often approach houses in winter and mingle with domestic poultry. Great numbers are killed by guns and taken in snares; and in the western and southern States many hundreds were often caught in a day by parties of men on horseback, driving the coveys into a great cylindrical net. It has been introduced into parts of Europe and may almost be regarded

as naturalized, though rare in England There are several species of allied genera in Mexico, California and northwestern America, of which one, the California Quail (*Lophortyx Californicus*), is remarkable for its long and beautiful black crest. See PARTRIDGE.

VIRGINIA RESOLUTIONS, The, in American history, a set of resolutions drawn up by James Madison in 1798. They were similar in import to the Kentucky resolutions (q.v.) drawn up the same year.

VIRGINIA UNION UNIVERSITY, Richmond, Va., an institution of higher learning for colored students, combining Wayland Seminary opened 1865 in Washington, D. C., and Richmond Theological Seminary, opened in 1865 in Richmond, Va., the union taking effect in 1899. It is a member of the Association of Colleges for Negro Youth and its special work is the training of leaders. It was established and is in large part maintained by the American Baptist Home Mission Society, but is Christian rather than denominational, welcoming teachers and students from many denominations. There is an endowment fund of $83,000 for salaries, scholarship funds of $14,000, and a library fund of $4,000, which are supplemented by contributions. The grounds comprise 45 acres adjoining Hertshorn Memorial College; six handsome granite buildings, power-house and athletic field constitute a very efficient equipment. Annual tuition fees are $20; boarding expenses from $129 to $140. The degrees of B.A., B.S. and M.A. are conferred. The faculty numbers 18. The average annual enrolment of students is 300. The graduates since organization number over 4,000.

VIRGINIANS, The, a novel by William Makepeace Thackeray, published in 1859. It is a sequel to 'Henry Esmond,' and revives a past society with the same brilliant skill as characterizes the first book.

VIRGINIUS AFFAIR, The. The "Virginius affair" occurred in the harbor of Santiago de Cuba in 1873 and almost caused a war between the United States and Spain. The *Virginius,* a ship registered in the New York custom-house 26 Sept. 1870 as the property of an American citizen, was captured on the high seas near Jamaica by the Spanish man-of-war *Tornado,* 31 Oct. 1873. The reason given was that she was about to land men and arms in Cuba, which was then engaged in the "Ten Years' War" against Spain. At the time of capture the *Virginius* was flying the American flag. She was taken to Santiago. President Grant remonstrated with the Spanish government, and through the United States Minister to Spain, Gen. Daniel E. Sickles, demanded the release of the *Virginius* and her crew.

Spain was at that time a republic, under President Castelar, and while his government was asking for time to obtain information and was making promises, the authorities in Cuba determined to take matters into their own hands. On 7 Nov. 1873 the captain of the *Virginius,* Joseph Fry, and 36 of the crew, were shot. The next day 12 of the most prominent passengers were also shot. When the news of this action became known in the United States the excitement was intense, meetings were held, and the bloody work was denounced. President Grant authorized the putting of the navy on a war footing, diplomatic relations were on the point of severance and war was imminent. Meanwhile President Castelar made the excuse that his orders to stay proceedings were received too late to prevent the crime.

Several times it seemed that hostilities could not be avoided. Once General Sickles sent for a ship to take him from Spain. At last, however, on 29 November, a protocol was signed between Secretary Fish and Admiral Polo, by which Spain agreed to surrender the survivors of the crew and passengers of the *Virginius,* together with the ship, and to salute the flag of the United States on 25 December. If, however, it should be proved in the interval that the *Virginius* had no right to fly the United States flag, the salute should be dispensed with, though Spain should disclaim any intention to insult the flag. Three days before the time agreed on, Secretary Fish announced himself as satisfied that the *Virginius* had no right to fly the flag, and the salute was dispensed with. On 23 January Admiral Polo made the disclaimer agreed on. The *Virginius* was delivered to the United States navy at Bahia Honda on 16 December with the American flag flying. She was, however, unseaworthy and, encountering a heavy storm off Cape Fear, sank. The prisoners who survived were surrendered on 18 December at Santiago de Cuba, and landed in safety in New York.

VIRGIN'S-BOWER. See CLEMATIS.

VIRGO, vėr'gō, the sixth sign of the Zodiac, and also the name of a constellation which formerly marked this sign, but is now in the sign Libra. It contains the bright star Spica, and an interesting double star and a spiral nebulæ; it is on the meridian in the evenings of May and June. See ASTRONOMY.

VIRIATHUS, vĭ-rī'ą-thŭs, Lusitanian patriot; d. 140 B.C.. He was originally a herdsman, but became a leader in the 10 years' struggle against the Roman power about 151 B.C. He conducted a successful defense against the Roman army, defeating them repeatedly and finally hemmed in their forces and compelled the conclusion of a treaty of peace in order to save the army. The independence of Lusitania was acknowledged, and she became an ally of Rome, a treaty ratified by the Roman Senate. In 140, however, Servilius Cæpio succeeded to the consulship in Further Spain, invaded Lusitania and by bribery secured the murder of Viriathus, after which he conquered the country.

VIROQUA, vĭ-rō'kwą, Wis., city, county-seat of Vernon County, near the Kickapoo River, and on the Chicago, Milwaukee and Saint Paul Railroad, about 85 miles northwest of Madison and 22 miles south of La Crosse. The city is in an agricultural region, and is noted for the abundance of trout and game in the near vicinity. There are large shipments of grain, farm products and livestock. Tobacco growing and sorting is an important industry. Railway ties and poles are cut and shipped; there are also machine shops. Pop. 2,059.

VIRUS, morbid poison; the contagion of an infectious disease. It is the morbific principle, associated with a germ that is the medium for communicating disease between men and

animals. The term more especially designates those peculiar poisonous matters which can reproduce themselves under favorable conditions to an endless degree. The poison of the cobra is a specific virus which, when introduced into the human system, acts as a most virulent poison; but the poison is not multiplied within the human subject, and one person affected by the poison cannot communicate the disease to another. In like manner, morbid products from decaying vegetables under certain conditions of heat and moisture may possibly originate the virus of malarial fever; but the virus is not propogated within the human organism, or, at all events, never in such a form as to render it capable of producing the same disease in others. By some the virus of the contagious or infectious disease is supposed to be a *contagium vivum seu animatum*, the theory being that the virus consists of living beings or low organisms. Such views have been advocated by Kircher, Lancisi, Vallisneri, Réaumur, Linné, Henle, Roberts and others; and although the theory of a *contagium vivum* is not as yet complete, the discussion of it is the most important which has ever engaged the attention of medical men. The most prominent characteristic of each specific virus is that it can reproduce itself within the human organism, and to an unlimited extent, each virus preserving its own specificness. Experience and observation tend to confirm the hypothesis that each specific disease breeds true, though, in the course of ages, it is possible that changes within certain limits may take place, as is the case in animals and plants. The natural conclusion follows that diseases of this class do not originate spontaneously, but are propagated each from its own kind, though some contend that they do not originate, even in our own day, spontaneously or autochthonously. Another remarkable peculiarity belonging to many, but not to all, diseases propagated by a specific virus, is that a single attack of the disease successfully surmounted produces absolute or relative immunity (q.v.) for a certain length of time, or even for the remainder of life. Others hold the theory that the germ is a result not a cause of the poison and disease. See BACTERIA; DISEASES, GERM THEORY OF; LYMPH.

VIS MAJOR, a civil law term used to denote an inevitable accident, that is, one which could not have been avoided by the exercise of care because it is the result of the operation of the forces of nature.

VISALIA, vī-sā'lī-ą, Cal., city, county-seat of Tulare County, on the Kaweah River, and on the Visalia and Tulare Railroad, about 40 miles, in direct line, south of Fresno and 10 miles north by east of Tulare. It was settled about 1850, laid out as a town in 1852, made the county-seat in 1853 and incorporated in 1874. It is in an agricultural region, and the chief manufactures are canned fruits. There are extensive shipments of farm products, fruit and canned goods. Long distance electric power has been installed and there are planing mills, machine shops, an ice factory, etc. The city has three banks and two daily newspapers. Pop. (1918 est.) 7,000.

VISAYAN (vē-sā'yān) **ISLANDS, or VISAYAS,** the central and largest group of the Philippine Archipelago, lying between lat. 9° 5′ and 13° N., and between long. 121° 49′ and 125° 51′ E.; south of Luzon, and north of Mindanao; land area, 23,502 square miles; total area, 77,840 square miles. It consists of the islands of Bohol, Cebú, Leyte, Masbate, Negros, Panay, Romblón and Samar and their dependent islands, numbering in all 490. Many of the dependent islands are of geographical and commercial importance; chief among them are Lapenin, Grande and Panglai (belonging to Bohol), Mactan (Cebú), Bilarian and Panaón (Leyte) and Guimaras (Panay). The staple products, hemp, sugar, tobacco, coffee, rice, cotton, corn and cocoa, of the archipelago are cultivated, the production of hemp being especially important in Cebú, Leyte and Samar. All the islands are well wooded; the best varieties of hardwoods grow in abundance, and many resin and gum trees. The mineral wealth is also of importance, the first coal discovered in the Philippines having been found in Cebú. Gold, silver, iron and copper are also found; though these are mined to some extent, the mineral resources are by no means fully exploited. The mechanical industries of these islands include sugar manufacture, weaving, the making of sugar sacks and cheese-making (in Cebú). Stock-raising and the trepang, pearl shell and pearl fisheries are also important industries. There is a large export trade in the products of agriculture, the manufactures and the fisheries. The land transportation facilities are especially good in Bohol, Cebú, Leyte, Negros, and the province of Iloilo, Panay.

VISAYAS, vē-sā'yās, or **BISAYAS,** a Malay people of the Philippine Islands, inhabiting the Visayan Islands (q.v.), and the northern and eastern coast of Mindanao. At the time of the arrival of the Spaniards they had a written language and considerable culture of their own; they practised the custom of tattooing, and were, therefore, called by the Spaniards *Pintados* (painted men). They were easily Christianized, and joined with the Spaniards in helping to subdue the Tagals. They are a docile and industrious people; particularly the inhabitants of Bohol are good mechanics, and for their success in trade have gained the name of the "Chinese of the Philippines." Their language shows a variety of dialects, of which the most important are the Cebunao and Panayano.

VISCACHA, the *Lagostomus trichodactylus*, a stout rodent belonging to the family *Chinchillidæ*, and resembling a marmot. It is from 18 inches to two feet long, plus the tail, which measures from six to eight inches. The fur is mottled gray above, yellowish-white beneath; a dark band stripes each cheek, and a white band is on the muzzle, running back on each side almost as far as the eye. Viscachas are nocturnal, live in communities and resemble rabbits in their habits, but are less active. They are found on the pampas, from Buenos Aires to Patagonia. These animals have the strange habit of dragging all sorts of hard and apparently useless objects to the mouth of their burrows, where bones, stones, thistle stalks and lumps of earth may be found collected into a large heap, sufficient, according to Darwin, to fill a wheelbarrow. They form the principal

food of the wolves, pumas and jaguars of their country.

VISCAINO, vēs-kā-ē'nō, **Sebastian.** See VIZCAINO, SEBASTIAN.

VISCELLINUS, Spurius Cassius, first Roman agrarian agitator. He was victorious over the Sabines as consul (502 B.C.) and in his second consulship (493) made a treaty with the Latins, which was advantageous to both parties. In his third consulship (486) he proposed a measure by which the plebeians should have a share in the *ager publicus.* The patricians immediately accused him of making favor with the commons in order that by them he might be chosen king and set on the throne of the recently expelled Tarquins. He was condemned to be thrown from the Tarpeian rock, in the execution of which sentence his own father took part.

VISCHER, fĭsh'ĕr, **Peter,** German sculptor: b. Nuremberg, 1455; d. there, 7 Jan. 1529. He was invited by Philip Elector Palatine to Heidelberg, but soon returned to Nuremberg, where he executed a great many works with the assistance of his five sons. Among his most celebrated works, whose architectural parts combine Gothic with Renaissance features, while his figures have all the realism of the Renaissance, may be mentioned 'The Tomb of Bishop John IV' in the cathedral at Breslau (1496); the 'Tomb of Archbishop Ernest' in the cathedral at Magdeburg (1497); the 'Tomb of Saint Sebaldus' in the church of that dedication at Nuremberg; and the 'Tomb of Eitel-Friedrich II von Zollern and of his wife in the church at Hechingen,' etc.

VISCHER, vĭsh'ĕr, **William Lightfoot,** American author and actor: b. Owingsville, Ky., 25 Nov. 1842. He was graduated from the law department of the University of Louisville, but never practised, subsequently engaged in journalism and in 1904 went on the stage. He has published several novels, among which are 'Way Out Yonder'; and 'Peter Vansant'; 'Blue Grass Ballads,' etc.

VISCONTI, vĭs-kŏn'tē or vēs-kōn'tē, an old Milanese family, celebrated for its political consequence and its patronage of science. History makes mention of the Visconti in the 11th century; but they disappear from the time of the destruction of Milan by Frederick Barbarossa, when, with some other noble families, they were obliged to yield to the superior power of the opposite party, the Torriani or family Della Torre. The first of the Visconti who laid the foundation of their greatness was OTTONE: b. 1208; d. 1295, created archbishop of Milan in 1263, and perpetual lord of Milan in 1277, who gained the ascendency over his enemies, and bequeathed his power to his nephew, MATTEO: b. 1250; d. 1322. The latter was, however, driven into banishment by the Torriani, but after living in exile seven years had the address to obtain the title of imperial vicar 1294, which he soon exchanged for that of lord-general of Milan (1311). Matteo transmitted the supreme power to his eldest son, GALEAZZO: b. 1277; d. 6 Aug. 1328, who was overpowered by his enemies and thrown into prison by Louis of Bavaria in 1327, but was soon afterward released. His son Azzo: b. 1302; d. 14 Aug. 1329, who succeeded him and increased the extent of his dominions, acquiring nearly all of Lombardy, was not less distinguished for his pacific virtues than for his military talents. His uncle LUCCHINO: b. about 1287; d. 24 Jan. 1349, succeeded him. The latter extended the dominions of the family, and was the first of the name who was distinguished as a patron of science and art. He corresponded with Petrarch. After his death in 1349 his brother, GIOVANNI: b. 1290; d. 5 Oct. 1354, archbishop of Milan, assumed the reins of government. He was a zealous patron of letters. He appointed a commission of six learned men to compose a commentary on Dante, fostered the University of Bologna and received Petrarch on his arrival at Milan with the highest marks of distinction. Giovanni was succeeded by his nephew, MATTEO II, d. 1355; BARNABO, d. 1385; and GALEAZZO II, d. 1378. Matteo's two brothers, who shared their estates on his death, though eminent for their warlike talents, rendred themselves obnoxious by their cruelty and other vices. Galeazzo, however, continued to treat Petrarch with the same respect that his predecessors had shown him, and employed him in several negotiations. He was succeeded in 1378 by his son, GIAN GALEAZZO: b. about 1347; d. 3 Sept. 1402, who imprisoned his uncle Barnabo in the castle of Trezzo, and took upon himself the sole government (1385). In him the Visconti family reached the summit of its grandeur and splendor. In 1395 he received from the Emperor Wenceslas the ducal dignity; and his territories were more extensive than those of any of his predecessors. Pisa, Siena, Perugia, Padua and Bologna were subject to his sceptre; and he had already shown a disposition to assume the title of king of Italy, when his ambitious projects were cut short by his death of the plague. He fostered science and art, collected the most distinguished scholars at his court, restored the University of Piacenza and connected that of Pavia with it, and founded a large library. He built the celebrated bridge over the Ticino at Pavia, and began the magnificent cathedral at Milan. Gian Galeazzo left three sons, GIAMMARIA: d. 16 May 1412; FILIPPO MARIA: d. 13 Aug. 1447, and an illegitimate child, GABRIEL: d. September 1408. Giammaria succeeded to the dukedom, and was assassinated, after which Filippo Maria reigned alone till his death. His natural daughter, Bianca, had been married to Francesco Sforza, who was named Duke of Milan in 1450. Consult Sismondi, 'Histoire des Républiques Italiennes' (1826–33); Symonds, 'The Age of the Despots' (1875).

VISCONTI, Ennio Quirino, Italian archæologist: b. Rome, 1751; d. Paris, 7 Feb. 1818. He was the son of Giovanni Battista, and from his earliest years was trained in the habits of an antiquary. He continued the work begun by his father entitled 'Il Museo Pio Clementino Descritto,' of which he wrote the greater part and which extended to seven volumes, the last appearing in 1807. In 1785 he was appointed keeper of the Capitoline Museum. In 1798 he was one of the five consuls of the Roman Republic, and during a consulate of seven months founded the Roman Institute. In 1799 he left Italy and settled in Paris, having been appointed an administrator of the museum of the Louvre, and professor

of archæology. His archæological works are very numerous, and among the most popular are 'Description des Antiques du Musée Royal'; 'Description des Vases peints du Musée'; 'Iconographie Grecque'; and 'Iconographie Romaine.'

VISCONTI, Louis Julius Joachim, French architect: b. Rome, 11 Feb. 1791; d. Paris, 1 Dec. 1853. His architectural studies were prosecuted at Paris under Percier and Fontaine, and at 17 he entered the Ecole des Beaux Arts. In 1817 he was superintendent of building on the Paris Wine Market; in 1822 inspector of building to the city government; and 1825 architect of the great library of Paris. His most important works are the tomb of Napoleon I, under the dome of the Invalides; and the additions to the Louvre, which latter he did not live to complete.

VISCONTI-VENOSTA, vā-nos'tā, **Emilio Morquis,** Italian statesman: b. Milan, 22 Jan. 1829; d. 1914. In 1846 he entered journalism as a liberal and for a time was an adherent of Mazzini. In 1859 he was appointed by Cavour royal commissioner at Garibaldi's headquarters in Lombardy, was elected to the Chamber of Deputies in 1860 and was Minister of Foreign Affairs 1863–64, 1866–67 and 1869–76. He became senator in 1886, was Minister of Foreign Affairs for a fourth time 1896–98 and in the Pelloux Cabinet held the same post 1899–1900, as also in that of Saracco, 1900–01. His foreign policy was characterized by an ardent desire to retain the goodwill of France.

VISCOSITY, that property of a fluid or semi-fluid which resists rapid change of shape or arrangement of parts; the indisposition of a body, by reason of internal function, to yield to the force of gravity, pressure, etc., and flow readily. All substances, ranging from gases to solids, are supposed to possess this property in a greater or less degree. A noteworthy instance of viscosity is exhibited by sealing wax; for while it is quite rigid in resisting forces quickly applied, it will change shape greatly under the action of a small force (its own weight, for example) applied continuously for a long time. Molasses, tar, asphalt and many other substances also illustrate this property in a striking way; while water, alcohol, air and other liquids and gases, as shown by suitable experiments, possess the same property in a very slight degree. Balfour Stewart defines viscosity as "a property which prevents freedom of vibration and which ultimately converts vibrations into heat." In practice, the hard metals exhibits no noticeable viscosity, but the fact that a long bar of the hardest steel will bend of its own weight shows the property. The viscosity of a medium is measured by the quotient of the tangential stress developed along any plane in the medium, by relative motion of its parts, divided by the rate at which the velocity of the medium is changing with distance perpendicular to that plane. More briefly, this measure, which is commonly called the coefficient of viscosity, may be defined as the quotient of the resultant tangential stress at any point of the medium divided by the resultant angular velocity of the medium at the same point.

VISCOUNT, vī'kownt, a British title of nobility, next in rank to that of earl, and immediately above that of baron. It was first conferred by letters patent on John, Lord Beaumont, by Henry VI, in 1440. The title is frequently attached to an earldom as a second title, and is held by the eldest son during the lifetime of the father.

VISCOUS FERMENTATION, an undesirable form of fermentation that sometimes accompanies alcoholic or acetic fermentation. It yields a gum-like ropy substance that injures the fermenting mass.

VISE, vīs (Old French, *vis,* a screw, a winding stair; from Latin *vitis,* a vine), a spiral or corkscrew staircase, the form most generally used in mediæval buildings in which the steps wind round and rest at one end on a perpendicular pillar called the newel, and at the other end rest in the wall; the newel itself: in *mechanics,* a gripping appliance of wood or iron, consisting essentially of two movable jaws moved by a screw and used to hold an object in place while work is being performed on it; it may be either portable or fixed to a work-bench.

VISÉ, vē'zā, or **VISA,** vē'sä (French, *visé,* pp. of *viser,* to put one's visa to; from Latin *visus,* pp. of *vidēre,* to see), indorsement made on a passport or the like, denoting that it has been examined by the proper authorities to show that it is in order.

VISEU, vē'sā-ô, Portugal, city of the province of Beira; in a wide, fruit-producing plain, 1,300 feet above sea-level, 50 miles northeast of Coimbra. Its cathedral is a striking flamboyant edifice and contains excellent pictures by Gran Vasco, the Portuguese Fra Angelico. In the vicinity is the old Roman camp, Cava de Viriato. The town, one of the oldest in the country, contains other Roman as well as Gothic and Moorish remains. A large fair is held here. Pop. 8,000.

VISHNI-VOLOTCHOK, vich'nī-vō-lō-chŏk, Russia, town situated in the government of Tver, on the river Tzna, about 230 miles southeast of Saint Petersburg by railway. It is on the Vishni-Volotchok water-route constructed by Peter the Great, connecting the navigation of the Baltic and Caspian seas by means of the Volga, etc. There is a very extensive transit trade. Pop. 16,000.

VISHNU ("vish," to work, encompass, or "vis," to penetrate, related to the Latin "vis," energy, activity), the second god of the Hindu triad or trimurti, but worshipped as the supreme deity by the Vaishnava sect, which numbers about 60,000,000. Their belief, however, does not prevent them being votaries of deified heroes, and of thus presenting various attitudes toward their supreme deity and of dividing themselves into numerous sub-sects, in accordance with their various interpretation of his activities. Vishnu was originally one of the nature gods, probably the sun, but as he progressed from the position of one of a vast number of deities to that of the supreme god of the Vaishnava, he gathered to himself most of the powers and attributes of the other gods of his own pantheon, and in addition to these other attributes of deities belonging to tribes of India possessing other religious ideas, organization and myths. It seems probable

that the numerous incarnations of Vishnu, which are variously definitely given as from 10 to 24, had their origin in attempts to explain the many and contradictory forms in which the god is said to have appeared upon earth at various times. This, too, would explain the more than a thousand epithets, phrases and names applied to him to describe or define his power, grandeur, attributes and spheres of action, to which numerous tribal myths contributed. There are at present 20 distinct Vaishnava sects scattered throughout India, out of the 43 sects of the Hindu religion; and there are 42 towns and cities that have famous shrines looked upon as sacred places. Of these 20 are especially sacred as directly connected with incarnations of Vishnu. The orthodox Vaishnava adherents hold to 10 incarnations of Vishnu, but they do not all agree as to what these incarnations were. However the general Vaishnava opinion now gives them as follows in their order of happening: Fish, Tortoise, Boar, Man-lion, Dwarf, Parasu Rama, Rama Chandra, Krishna, Buddha and Kalki or white horse. Under each of these incarnations Vishnu is said to have appeared with some definite object in view, and so about them has grown up a vast amount of legendary and religious lore, myth, tradition and poetry which have woven themselves into the life of the Indian people, whether or not they be of the Viashnava sect.

Vishnu is a personification of the preserving power and of the sun; though some claim that the sun is the type of Vishnu. Nine of his incarnations have taken place, but his tenth, that of the white horse, is still to be assumed. When this shall have been accomplished, he will have assumed five different animal and five different human forms — Vishnu, Brahma and Siva together form the trinity of the Hindu religion. At one time these were distinct Hindu deities. Their rival claims for recognition were finally met by making them three forms of the one supreme god. This was, however, a creation of the priests and ecclesiastical students; while the great mass of people continued to retain their belief in a multiplicity of deities. As the worship of Vishnu spread more widely over India it took in tribes formerly unaffected by the so-called Hindu religion. These brought with them into the faith myths, religious ideas, superstitions and traditions to many of which they continued to cling tenaciously. All this added vastly to the body of traditional lore connected with Vishnu and undoubtedly was the cause of the popular belief in his many incarnations, each of which, in all probability, represented some tribal deity or some mythological character of an older faith. Thus Vishnu is sometimes time, at others, the earth, water, air, space. He is the creative power, and even of him was born Brahma. Vishnu is thus a manifestation of himself. He is represented either in his own person or in that of his incarnation or avatara. Quite frequently he is represented as having four arms and bearing in each of his hands one of his four symbols, a disc, conch-shell, mace, lotus (or sometimes a sword). These have been variously interpreted; but now the shell (or trumpet) is the sign of battle; the disc is emblematic of his solar origin; the lotus of his creative power, since from the lotus that sprung from Vishnu was born Brahma; the mace, emblem of physical power and the punishment of the wicked. One representation of Vishnu presents him as resting on a huge, coiled, many-headed serpent; others picture him as reclining upon the lotus while above his face rise the many heads of the serpent that guards and shades him. Again he is seated upon a throne indicative of his supreme power, or as the culture god, he drives the plough or handles the tools of the artisan; or he rides on the swift Garuda, an animal with the body of a man and the head, beak, wings and talons of an eagle. In the Rig-Veda he is represented as "striding through the seven regions of the earth" and "planting his feet in three ways." This metaphorical language is explained as being a picture of the sun at rising, at midday and at setting.

The growth of the divine attributes given to Vishnu is clearly exhibited in the sacred Hindu writing. In the Rig-Veda he is a representation of the personified sun; and there are internal evidences to show that his worship must have stretched back into an age when the sun was looked upon as a powerful living personage. Here he represents solar light, fire and lightning and he has not yet grown to be the supreme deity, nor is he even regarded as the equal of the other great Hindu gods of the Vedic period. But the literature constantly gathering about the Hindu pantheon began to be of very great extent and to take to itself an epic character. In this literature Vishnu begins to play a very important rôle, and in the Sanskrit writings the Mahabbhârata and Ramayâna he occupies the centre of the stage as the figure of chief interest. In fact the latter of these writings may be considered one long epic in praise of Vishnu, the supremely powerful and illustrious of the gods, the incomparable, the all-wise, all-seeing, the eternal presence, the maker of heaven and earth, the supreme ruler of the spacious firmament. As the war god, he commands an innumerable host of monkey-warriors. Almost countless are the attributes of his majesty, and boundness the extent of his dominion and power. Yet behind this pre-eminent position attained by Vishnu in comparatively modern times in which the Hindu mind approaches the position of monotheism, where one deity takes the supreme place, and the others become helpers in the work of looking after the universe, and are ultimately softened down into saints and other less heathen-sounding names, there constantly appear the grotesque faces and attributes of the ancestral nature deity and imaginative mythology of a primitive race. Vishnu appears in animal incarnations. From the depths of the waters of generation he sends forth from his navel the lotus from which Brahma is born; as the ever-existing tortoise he bears on his back the universe; as the filler of all space he has the power to contract himself into the form of a dwarf. In the so-called incarnations accounting for the many attributes gathered to himself by Vishnu from the other deities, the supreme god is said to be the champion and defender of gods and men. This taking over the powers and attributes of

other deities made it easy for other creeds to come under the wing of Vishnu. The local deity became an incarnation of the supreme deity and as such continued to hold his place in the hearts of his people, often to the extent of making Vishnu himself a somewhat shadowy character; and it led, as already stated, to the growth of a great number of sects in which there are really wider differences of faith and practices than between the different branches of the religions which have their origin in the Jewish faith, so far is the Hindu religion from being a unity. Vishnu makes his home in his glorious paradise, Vaikintha, where he is surrounded by the 1,000 Gopis or shepherdesses who are eternally and passionately in love with him. There, too, with him is his matchless wife Sita or Sri (q.v.).

Vishnu is represented as a very kind deity, and to this, undoubtedly, is due the increase of his popularity throughout India. His festivals are joyous and some of them tend to be licentious. Flowers are his most characteristic offerings and his crowded temples are decorated with them.

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VISHNU, Institutes of, a work of standard authority in the religious faith and practice of the Hindus. In its recognized and partly modern form it consists of 100 chapters of legal precepts and aphorisms, put under the name of Vishnu, originating from the early Vedic school called the *Cathas*, but much added to in subsequent times. See INDIA; SANSKRIT LANGUAGE AND LITERATURE; VEDA; VISHNU.

VISIBLE CHURCH, an ecclesiastical term meaning the Church, as seen by man, not as it appears to God. It includes the whole body of professing Christians, some of them regenerate, others unregenerate, as distinguished from the Invisible Church, consisting of all those who are worthy in the sight of God to be members of His Church.

VISIBLE SPEECH, the name given by its inventor, Alexander Melville Bell, to a system of alphabetical characters designed to represent every possible articulate utterance of the human organs of speech. It is based on an exhaustive classification of the possible actions of the different organs concerned in speech, and to every organ and every mode of action of an organ a symbol is assigned. Of these radical symbols there are in all 30, and by combinations of these 30 symbols some hundreds of characters may be formed to represent the sounds of the human voice; but little more than 100 characters are actually required for all the ascertained sounds of different languages, and only two-thirds of the 30 radical symbols are required in forming the signs or letters necessary for the writing of any European language. In form the letters are as simple as those of the Roman alphabet. After completing this system, Mr. Bell submitted it to the consideration of a large number of gentlemen well qualified to judge of its value, and allowed it to be tested in their presence in such a manner as to make quite clear its efficiency for the purposes for which it was devised. See DEAF, EDUCATION OF THE.

VISIGOTHS, vĭz'ĭ-gŏths, or **WEST GOTHS,** the western branch of the Goths (q.v.), who, after the death of Theodosius, broke into Italy under the leadership of Alaric, and captured Rome in 410. Alaric died later in the same year before he had matured his plans, and after his death his brother-in-law Athaulf, who was placed at the head of the nation, turning toward Gaul, made new conquests on both sides of the Pyrenees. He reached Barcelona, where he was murdered in 415; but his successors continued to extend their dominions in Gaul and Spain. Wallia made a treaty with the Romans, and in return for certain services received under their nominal suzerainty, though in virtual independence, western Aquitania, with Toulouse as capital. He died in 419. His successor, Theodoric I (419–451), was treated by the Romans as an independent ruler, and took part in the victory over Attila on the Catalaunian Fields in 451. Euric (466–483), third in succession to Theodoric, conquered the Suevi and other races, and is considered the founder of the Visigothic kingdom. Clovis, king of the Franks, on pretense that it was unjust to let the heretic Visigoths possess the fairest portion of Gaul, attacked the peaceful Alaric, Euric's successor, and defeated him at Vouglé in 507. The Franks obtained possession, without resistance, of most of the cities in southern Gaul, and the kingdom of the Visigoths would have been in great danger had not Theodoric, king of the Ostrogoths, undertaken its defense. While guardian of the Visigothic prince, his grandson, he embraced the favorable opportunity to make himself master of a part of the territories still belonging to the Visigoths in southern Gaul; and after a long separation of the two nations there existed for a time an intimate connection of the Ostrogoths and Visigoths. After his death, dissensions arose among the Visigoths, and the pernicious influence of differences of religion became more and more evident. The kingdom of the Visigoths arose again with new energy under Leovigild (568–586), who totally subdued the Suevi, improved the laws, limited the power of the nobles, made Toledo the royal residence and tried to render the regal power hereditary. His son Recared adopted the Catholic faith on his accession (586–601), upon which the divisions of the people ceased, and Goths and Spaniards became one nation. Under his reign was held the Council of Toledo. His conversion had the most important influence on the character of the government. As soon as the Catholic faith became the established religion, the clergy, who had been completely subservient to the king under the Arian form of Christianity, acquired a predominant influence,

and constituted a hierarchy under the direction of the papal authority. The Arian bishops had lived quietly in their dioceses, and had no influence on the public administration; but the Catholic bishops obtained an active participation in public affairs. The grandees of the kingdom, usurping the rights of popular representatives, remained no longer the first class in the state; the mode of choosing the king was altered in favor of the bishops; and under weak kings these found it easy to place themselves at the head of the state and to procure exemption from all public burdens. As early as 633 the regulation was made that those secular grandees alone should be admitted to the councils who should be pronounced worthy by the bishops. Internal disturbances facilitated the conquest of the country by the Saracens, who were settled on the north coast of Africa. In 675 these Mohammedans had begun their attempts to settle in Spain, and during the reign of the weak Roderick were enabled to execute their project. The Goths were defeated in 711 at Xeres de la Frontera; the king was slain, and the Saracens spread themselves over the greatest part of the country. (See SPAIN). The remainder of the Goths, who, after the downfall of the kingdom, fled to the mountains of Asturia and Galicia, founded there new kingdoms, in which the constitutions of the Visigoths were in part retained, and which, when their descendants broke forth from their fastenesses and wrested from the Moorish settlers one tract after another, finally gave rise to the kingdoms of Spain and Portugal. The traces of the public institutions of the Visigoths were preserved in the laws. The most ancient collection of Spanish laws, the Fuero Juzgo, or Forum Judicum (see FUERO), is drawn from the ancient laws of the Visigoths; and many of their institutions have been retained to the present day in the provincial laws of Castile and Catalonia. The Spanish language contains a strong admixture of the Gothic element. Consult Hodgkin, 'Italy and her Invaders' (1880–85).

VISION, the sense of sight. Visual sensations include brightness qualities (blacks, whites and grays), and color qualities (reds, greens, yellows, purples, etc.). They are produced by the action of light upon the eye and, taken in conjunction with certain other sensations, which are set up in and about the eye by the functioning of muscles and tendons, they give rise to the visual perception of objects and processes in the outside world. A descriptive account of vision has to deal (1) with the visual apparatus, both as a dioptric or refracting mechanism, which conveys light-rays to the retina, and as a nervous organ, which transforms the vibratory stimulus into neural excitation and transmits it to the brain; (2) with the sensations of brightness and color as regards their quality, number, classification, etc.; (3) with the specific processes which underlie and condition visual sensation; and (4) with those perceptions of things and events which come to mind through the avenue of sight.

The Visual Apparatus.— This apparatus consists of the eye, the optic nerve, subcortical centres (of the corpora quadrigemina and thalami), and terminal or central areas in the cortex of the occipital lobes. It is generally believed that visual sensations are directly correlated with the functions of the last or cerebral part, only, of the visual mechanism; the office of the eye, the optic nerve and the lower centres being the transmutation of ether-vibrations, the transmission of nervous impulses to the brain and the setting up of various movements — such as rotation of the eyes, accommodation and winking — which are important factors in visual perception.

In the human adult, the eye is a spheroidal mass having an antero-posterior diameter of about one inch. The central part of its front surface (the cornea) possesses a higher convexity than the remaining oqaque surface. It is seen from a lateral position as a bulging transparent covering. The eye is invested with three coats and its interior is divided into two chambers; a smaller anterior cavity containing the aqueous humor and a larger posterior cavity filled with the vitreous body. Between the two chambers lie the iris (the colored part of the eye), its circular opening (the pupil) and the crystalline lens.

The function of the refracting mechanism, which includes the cornea, the aqueous and vitreous humors, and the lens, is to focus the light entering the eye, and to project upon the retina a small inverted image of the object seen. The eye is essentially a small camera. It differs, however, from the ordinary photographic camera in adjusting its focus for different distances by changing the convexity of its lens — not by altering the position of its sensitive surface, the retina. The process of increasing the convexity of the crystalline lens is known as accommodation. It is compassed by the reflex action of the ciliary muscles which permits the lens to bulge forward in viewing near objects and to flatten out in viewing distant objects. The retinal focus is thus maintained. The eye rests in its socket on a cushion of fat, and is turned in its orbit by the joint action of three pairs of antagonistic muscles, the internal and external recti, the superior and inferior recti and the superior and inferior obliqui. Since the two eyes function as a single organ (binocular vision), it is important that they move together and thus bring the images of an object upon corresponding retinal areas. The turning inward of the eyes in their common fixation of an object is called convergence.

The true nervous end-organs for vision lie in the retina. The retina is a complex structure, of no less than eight strata or layers, which forms the innermost coat for the posterior part of the eye. Within it are the rods and cones, which stand closely connected with the neural elements leading to the brain, and which are probably the seat of those changes that transform the light-energy transmitted to the eye into the immediate stimulus for nervous excitation. The neural elements (nerve-fibres) which transmit the excitation unite near the centre of the retina, pierce the outer investments of the eye at the porus opticus — called also the "blind spot," because the retina at this point is insensitive to light — and continue as the optic nerve. The two optic nerves come into communication below the brain, in the median plane of the body, and form the optic chiasma. Beyond the chiasma there is a second division, a part of the fibres of both nerves passing to each hemisphere of the cerebrum.

Sensations of Color and Brightness.— Visual sensations include the colors seen in the solar spectrum, a series of purples ranging between red and violet, and all the grays, whites and blacks. Colors proper (that is, excluding mere brightness qualities) form a closed series in which one may pass by small gradations from any quality, as red or green, through every other quality, and arrive finally at the starting point. For this, it is only necessary to join the red and violet ends of the spectrum by inserting the purples. The closed color-series naturally falls into halves. The one half contains the reds, oranges and yellows, which obviously belong to a single group of qualities, the "warm" colors; the other half, the greens, blues and violets, the "cold" colors. The line of division falls in the purples on the one side, and in the yellow-greens on the other, both these colors including transitional points between the two types. Within each group, again, may be distinguished two subtypes, the red and yellow types in the one, the blue and green in the other. To each group belong several neighboring qualities which merge gradually into one another. To complete the classification of visual sensations it is necessary to bring the color sensations into relation with brightness (the gray series). That an intimate relation obtains between the two series is shown by the fact that each color has itself a certain brightness; the yellow of the spectrum, for example, has a brightness corresponding to a light gray, while spectral blue corresponds in brightness to a medium gray. Moreover, it is possible to pass gradually from any color to a pure brightness. This transition occurs, for example, in the fading of painted surfaces into gray. In such a case, the richness or saturation of the color is said to be reduced. The relation of color tones (colors in the narrower sense) to each other, to brightness and to saturation is represented in the accompanying figure (Fig. 1). The vertical axis (W Blk) of the double pyramid represents the gray series from white to black. The letters around the base (G, Ol, Y, Or, etc.) stand for color tones at maximal saturation. The saturation of any tone is represented by the length of a perpendicular dropped from the point in the base where the color is found upon the gray axis; the brightness of any tone, by the point where this perpendicular strikes the axis. The inclination of the base brings the perpendicular from yellow (Y) higher up the axis than the perpendicular from the blue (B). This is in accord with the greater brightness of the former color. The number of pure brightness that can be discriminated is estimated to lie between 650 and 800; the number of color tones — reds, greens, violets, etc.— is about 150.

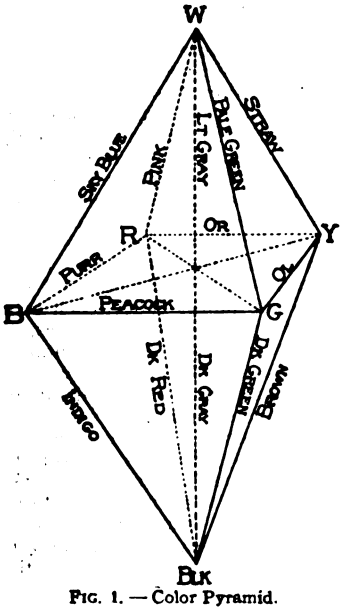

Fig. 1. — Color Pyramid.

To produce the large number of possible color tones it is not necessary to have recourse to a corresponding number of wave-lengths; for, given a small number of tones, properly chosen, it is possible to produce all the others by the process of color-mixture. One of the most common methods of mixing colors is by the use of pigments; another is by rapid rotation of the color-wheel, which carries two or more sectors of colored paper or cardboard. At a certain rate of revolution of the color-wheel the observer ceases to see the separate sectors and sees instead a single homogenous color which is different from either of the sectors used. The tone of the "mixed" color depends upon the relation of the colors mixed. If two colors stand near each other in the spectrum, the "mixed" color is intermediate: for example, red and yellow mixed give an orange; violet and red, a purple. There is, however, for each color, a "complementary" color which when mixed with it in a certain proportion gives — not a color tone at all, but — a pure gray or white. It should be noted that, in every case, it is *stimuli* that are mixed and not sensations; that the mixture is of physical or physiological processes not mental processes. A "mixed" color is as simple, psychologically, as any other.

Visual sensation depends not only upon the light stimulus to which the eye is exposed and upon the mixture of stimuli; it depends also upon (*a*) the part of the retina stimulated, (*b*) the stimulation of adjacent areas and (*c*) certain more or less permanent effects left by the stimulus upon the visual organ.

(*a*) It is only in the central part of the retina — the part lying about the fovea or spot of clearest vision — that all the colors are seen; further out toward the periphery of the retina lies a zone in which reds and greens are not sensed (only blues and yellows), and, still further out, an outermost zone whose stimulation gives rise to brightness sensations only. That is to say, the normal eye is totally color-blind over a part of its sensitive area and partially color-blind over a second part. Abnormal color-blindness, then, which is relatively common in the race, may be regarded — at least in its commoner forms — as an extension to the fovea of the normal color-blindness of the normal eye.

The eye is a chemical sense; that is, chemical processes are interpolated between the reception by the eye of light-waves and the neural processes that are ultimately set into function by them. Two special results follow from this fact. First, stimulation is not strictly confined to the part of the retina directly affected by light; and,

secondly, nervous excitation continues after the external stimulus has ceased to operate. (*b*) The first of these results, retinal irradiation of chemical or photo-chemical processes, is strikingly demonstrated by the phenomena of contrast. A patch of white looks whiter if it is placed on a black surface; black looks blacker in the neighborhood of white. In a similar manner, the saturation of a color (for example, red) is enhanced if it is brought near a complementary color (blue-green); and, finally, a gray in the immediate neighborhood of a color (for example, green) is tinged, under certain conditions, with the complementary of that color (purplish red). The last case, induction of a contrast color upon a gray, may be observed in the shadows of snow, which often look blue under yellow sunlight. The general effects, both of brightness and of color contrast, are, moreover, frequently to be seen in clothing and in interior decorations. The fundamental law of contrast is that the contrast effect is always in the direction of the opposite brightness or of the complementary color. (*c*) The result of continued stimulation of the eye is to change the condition of excitability of that organ. If large colored glasses be worn before the eyes for several minutes the unnatural hue of objects, which is at first very noticeable, gradually disappears. With blue glasses, objects at first look bluish, but finally return to their proper tones. The eyes are said to have become blue-adapted. A similar effect is produced if only a small part — not the whole of the retina — is exposed for some moments to colored light. A piece of red paper, for example, hung on a gray wall and fixated steadily gradually loses its saturation and approaches a gray. But not only is the excitability of the eye altered under continued stimulation; it remains altered, as noted above, even after the exciting cause has ceased to operate. When the blue glasses are removed the landscape looks yellowish; the observer is yellow-sighted. Similarly, when the red paper is removed, a bluish-green patch appears upon the gray wall. The first result is due to general adaptation, the second to local adaptation. In both instances, adaptation forms a predisposition for seeing colors which are complementary to the original, stimulating colors. The result of local adaptation (as the bluish-green patch induced by the reddish paper) is a negative after-image. Adaptation and after-images follow the same course with brightnesses as with colors. It is, for example, a matter of common observation that confinement in a darkened room enhances the brightness of objects seen subsequently in full light; that exposure to a strong light (sunlight on snow) tends to reduce the apparent brightness of objects seen afterward in moderate illumination, and, finally, that fixation of a dark or a light area, induces a negative after-image of the opposite brightness. All these phenomena illustrate the effects of adaptation.

Theories of Visual Sensations.— These theories aim to set forth the conditions under which the sensations arise. The most important in the field are the rival theories of Hermann v. Helmholtz and E. Hering. The Helmholtz theory provides for three primary sensations, red, green and blue (or violet), which rest upon three distinct processes of excitation, in the visual apparatus. To explain the large number of spectral qualities, it is assumed that these three processes, combined in varying proportions, give rise to all possible color qualities, and that in equal amounts they produce gray. The theory, which was outlined by Thomas Young and elaborated by Helmholtz, was designed primarily to account for the facts of color-mixture; that is, for the production of a large number of "intermediate" qualities and of grays by means of a few "elementary" sensations. These facts of color-mixture it covers well; but it fails — particularly in its traditional form — to explain many other facts of color vision, notably the possibility of obtaining gray in the absence of color tone (as in color-blindness, peripheral vision and from stimuli of small extent). Recently, important modifications and additions have been introduced into the theory which have, in a measure, removed its deficiencies.

The Hering theory rests upon a basis quite different from that of the Helmholtz theory. Hering posits three retinal substances; but he makes each of these the seat of antagonistic processes — processes of assimilation or building up and of dissimilation or tearing down. To each of these processes in each substance corresponds a "primary" color. Assimilation of one substance gives rise to blue; dissimilation of the same substance, to yellow. This substance is called briefly the blue-yellow substance. Similarly the other two substances are called the red-green substance and the black-white substance. Blue, green and black correspond to the three assimilative processes; yellow, red and white to the three dissimilative processes. All forms of stimulation affect the black-white substance; but certain wave-lengths produce no effect upon the other two substances. Moreover, the black-white substance appears in greatest quantities, is most widely distributed throughout the visual apparatus and is most easily set into function. Since assimilation and dissimilation are opposed processes, the principle of antagonism assumes great significance in Hering's theory: the principle is, indeed, its most characteristic feature. Its application to complementary colors — where the opposed processes in the several substances cancel each other — to contrast, to adaptation, to after-images, etc., follows naturally from the fundamental conception. Although the Hering theory is open to attack on various technical grounds, it undoubtedly covers the whole range of visual sensation more adequately than its rival. There is considerable that is hypothetical in both theories. This is, however, a fault that recent work on the histology of the eye and on the function of the retinal elements is doing much to remedy. Within the last few years several new theories of visual sensation have come into the field. Most of them may, however, be regarded as modifications of one or other of the more classical theories just discussed. Their value and their relation to the older theories must be sought in the current literature of the subject.

Visual Perception.— It is characteristic of visual perception that all objects seen are spatial objects; that is, they occupy some place, some position in the spatial world; and they possess, likewise, spatial properties, form, distance,

direction, etc. This characteristic, it should be noted, is shared by tactual perceptions; but it is not a mark of perception in general — not, for example, of the perceptions of melody, harmony and rhythm. Since all visual perceptions are spatial, the chief problem they offer to psychology is the analysis of the spatial factors and the search for the conditions under which these factors operate.

The simplest factor in visual space is extension. Every visual sensation comes to consciousness as an extended sensation. A color is always "spread out"; its parts are adjacent. In this respect, colors and brightnesses are essentially different from tones and noises, which lack the attribute of extension. Space, as it is perceived, is an orderly arrangement of extended objects. It never exists by itself alone. There is no such thing, in perception, as "mere" space or "empty" space. Only by abstraction are the spatial properties removed from objects; only by abstraction, as in mathematics, does empty space come into existence. Even such quasi-abstract constructions as the line and the point do not properly figure in the psychology of space. It is, however, customary, within psychology, to distinguish two-dimensional and three-dimensional spaces; not because they differ fundamentally, but because they rest in part upon different conditions. The retina, being an extended organ upon which stimuli fall in patterns — thanks to the refractive functions of the transparent media — forms a natural substrate for the perception of surface magnitudes. But the retina is not so well adapted for tridimensional perception — perception of solid objects. A special provision for depth-perception is made, however, in binocular vision; that is to say, in the difference of the two retinal images which are thrown upon the two eyes by a single object. This difference in binocular images depends upon the different positions from which the two eyes observe the object. Now it is conceivable that the two unlike images should have come to consciousness as two distinct objects. But, as a matter of fact, they do not, except under unusual circumstances — as when one squints or presses with the fingers upon one eyeball. They do not even come to consciousness as two discrepant views of the same object. The difference in retinal images functions solely in the perception of depth or solidity. This is the principle involved in stereoscopic vision. Binocular perception of depth may be produced artificially by means of the stereoscope, an instrument which presents to the two eyes, under favorable conditions, two slightly different plane pictures of an object. Stereoscopic vision derives secondary aid, in ordinary perception, from linear and aerial perspective, from the known size of objects of reference, from change of position of the observer as well as of objects from distribution of light and shade, etc.

The spatial functions of the eye depend as well upon ocular movements and the sensations which these arouse as upon the immediate retinal factors just considered. It has been demonstrated by many lines of experimentation that were the eyeballs set firmly within the head without the possibility of movement (a condition which is approximately in the case of certain fishes) visual perception of objects would be enormously handicapped. In the first place, movement allows the eye to travel over the object, exploring it from point to point; in the second place, it sets up sensations both in the external muscles that rotate the eye and in the internal muscles of accommodation; and, finally, it is probable that to these factors must be added articular sensations from the rubbing of the eyes in their sockets. All these sensations, muscular, tendinous and articular, play important rôles in the determination of the spatial properties and relations of objects.

The eyes, regarded as perceiving organs, may be said, then, to fall into three parts; the retinas, which mediate visual sensations proper, and which function as a true double organ, the dioptric media, which focus the rays of light upon the retinas, and the movement-apparatus, which both alters the position of the retinal image and itself contributes kinæsthetic sensations from muscle, tendon and orbit.

Consult Calkins, 'Introduction to Psychology' (1901), ch. ii.; James, 'Principles of Psychology' (1896), Vol. II, ch. xx; Kuelpe, 'Outlines of Psychology' (1895), pp. 351–373; Stout, 'Manual of Psychology; (1899), pp. 141–170; Wundt, 'Human and Animal Psychology'; Titchener, 'Experimental Psychology,' Vol. I (1901), Part II, ch. i. For the structure and functions of the eye, consult also general textbooks of physiology. See EYE.

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VISION, Defects of. The conditions classed as defects of sight or vision are mainly due to anomalies in the structure of the eye, causing errors of refraction and other visual irregularities. Among the more common of these defects is that of astigmatism (q.v.), which is usually characterized by a symmetry in the curvature of the cornea (q.v.) in different meridians. Color-blindness (q.v.) is a serious disability in certain occupations. Day-blindness (nyctalopia) is a condition in which one sees better in a dim light than in a bright light, due to some opacity in the cornea, the crystalline lens, etc. It occurs in amblyopia (q.v.) and other affections which produce dimness of vision. Night-blindness (hemeralopia), on the other hand, is a state in which the person affected has normal vision in an ordinary light, but in twilight becomes suddenly blind. Double vision (diplopia) occurs when, as in some cases of squinting, each eye sees things separately. This defect arises from derangement of the visual axis, sometimes through muscular paralysis.

In longsightedness or farsightedness (hyperopia or hypermetropia) objects are seen distinctly only at a range beyond that belonging to normal vision. Owing to the shortness of the eye-cavity the lenses are unable to converge the rays to a focus within the limits of the eye-chamber, the image being, therefore, formed (theoretically) behind the eye. This defect is corrected by the use of convex lenses, which by converging the rays of light cause the image to fall on the retina. Shortsightedness or nearsightedness (myopia) is the reverse of longsightedness in causes as well as in effects. In this, owing to the too great power of the crystalline lens or to the extension of the eye-cavity too far backward images from objects at some

distance are formed in front of the retina, making the sight confused, if not entirely defective, for things beyond a certain limited range, while rendering it very clear for near objects. For remedying this condition biconcave glasses are employed, which, unless the myopia is serious, need be used only for looking at objects far off. Shortsightedness and longsightedness are usually congenital.

Presbyopia is a defect similar to hyperopia and usually comes on with advancing years, naturally beginning from the 40th to the 45th year. It is due to diminished focusing power and lessened elasticity of the lens, the result of which is that the image of a near object is not clearly formed on the retina, but is formed behind it, while distant objects are seen as well as ever. Convex lenses are used for remedying this condition.

Strabismus or squinting is a deformity often seen, and is ascribed to want of parallelism in the visual axes when the effort is made to direct both eyes to an object at the same time. It may be due to loss of power (paralysis) of one or more of the eye muscles; and this may depend on a merely local affection, or may be a symptom of serious brain disease. But in the majority of instances and in all ordinary cases no such condition is present. The squint is said to be convergent when the squinting eye is directed toward the nose, and divergent when it is directed toward the temple; the convergent is much the more common. Concomitant strabismus is a variety of which the amount continues about the same in all positions of the fixation-point. When the direction of the eye or eyes is upward or downward the squinting is said to be vertical. Convergent squint usually comes on during childhood, most often from the second to the seventh year. It is sometimes due to defective sight in the squinting eye, from congenital abnormality, severe inflammation or injury; but very often no such condition is present. In a large proportion of cases it is accompanied by hypermetropia, and is due to the increased effort of accommodation required to see near objects, being associated with an increased and disproportionate effort of convergence. In such cases, if suitable glasses can be worn as soon as the squint begins to show itself, it may be prevented from becoming permanent. In other cases the presence of a squint may be traced to worms, the irritation of teething, etc.; and it disappears when the cause is removed. Divergent squint is very rarely present without considerable defect in the sight of the squinting eye, except where it is the result of over-correction of a convergent squint by operation. It is often associated with myopia as the other form is with hypermetropia. The surgical operation for the correction of a squint consists in the division of the muscle whose excessive activity leads to the faulty position — in convergent strabismus the internal rectus, in divergent the external. It is often necessary to operate on both eyes in the same manner, even where the squint is monocular. In some cases it is requisite in addition to shorten the opposing muscle. See ASTIGMATISM; EYE; OPHTHALMIA; SENSES; VISION.

VISION OF ANIMALS. See EYESIGHT IN THE LOWER ANIMALS.

VISION OF BIRDS. See EYESIGHT IN THE LOWER ANIMALS.

VISION AMONG FISHES. See EYESIGHT IN THE LOWER ANIMALS.

VISION OF JUDGMENT, The. If we accept Byron's 'Don Juan' as something more than satire, his 'Vision of Judgment' is by far his finest satirical poem and, with the exception of Dryden's 'Absolom and Achitophel' (q.v.), is the best of its kind in English literature. It sprang directly from the last phase of a long-standing quarrel with Southey, the poet-laureate, whom Byron detested as a Churchman, a Tory and a literary man-of-all-work; but, more remotely, it had its origin in a complex of personal, political and literary causes. George III died in 1820 and in 1821 Southey wrote a preposterous panegyric of the dead king entitled 'A Vision of Judgment,' which shows Michael and Satan contending for his soul, with victory to the former, of course, and ushers George into heaven, where he is enthusiastically acclaimed. In his preface Southey attacks what he terms "the satanic school," meaning thereby chiefly Byron and Shelley. In this Southey blundered: he had provoked the most pitiless and brilliant satirist of the age. Byron had been waiting for the chance. Southey's absurd poem suggested a means of flaying the poet-laureate himself; of showing up George III as a model of private virtue but of public vice, and of attacking Tory politics and the whole reactionary political policy of European statesmen in general. Byron takes Southey's title for his own poem and for the method of his satire employs a travesty of the original, using the trial scene before the gate of heaven, only changing the tone of the whole from the would-be sublime to the intentionally ridiculous. The metre and the style of Byron's poem are those of the purely satiric portions of his 'Don Juan,' with its Italian ottiva rima, or eight-line stanza, its free and often burlesque rhymes, its realism, its sudden drops from the sublime to the ridiculous and its equally sudden rises from pure burlesque into poetry. The 'Vision of Judgment' is perhaps the only poem in which satire becomes truly sublime and one of the very few in which poetry and humor exist not merely side by side but are actually fused. Throughout its 800 lines there is no flagging of the wing of its superb energy. In indignation, in wit, even in humor, it has been equalled by other satires, but in high imagination, its attainment of the sublime, it remains unapproachable. Satire more scathing was never compressed into smaller compass; yet its scorn does not seem petty or spiteful: it has much of the Olympian quality of Dryden Though without the masterful characterizations of 'Absolom and Achitophel' (q.v.), it not only flies higher but sustains its flight even better, and it is not without its great lines that linger in the memory. Who can forget that

> "between his Darkness and his Brightness
> There passed a mutual glance of great politeness"?

The 'Vision of Judgment' was published in the first number of John Hunt's periodical *The Liberator*, in October 1822. The whole of the Tory press rose in its wrath; no English satire ever aroused a greater storm of abuse. A king had been made ridiculous; a great

party system had been attacked by a renegade and an agnostic. Hunt was prosecuted and was fined £100. The satire has survived the storm, as it has survived the political system which it ridiculed. Goethe called its stanzas on George III «the sublime of hatred»; Swinburne said that in it Byron gave satire wings to fly with. It was the last of the great verse satires written in English and it could have been written only by the poet who was on the whole the greatest of English verse satirists. Consult Fuess, Claude M., 'Lord Byron as a Satirist in Verse' (ch. IX).

MARION TUCKER.

VISION OF SIR LAUNFAL, län'fąl, **The,** a poem by James Russell Lowell, founded on an Arthurian legend and published in 1845.

VISION OF MIRZA, mėr'zą, **The,** a famous allegory by Joseph Addison, which appeared in No. 159 of *The Spectator.*

VISION OF PIERS PLOWMAN, pērz plow'mąn, **The,** an English poem of the 14th century, ascribed, chiefly on the ground of internal evidence, to William Langlande (q.v.) or Longland, a monk of Malvern, in spirit a Carlyle of the Middle Ages, crying out against abuses, insisting upon sincerity as the first of virtues. This poem belongs to the class of dream-poems and reflects both the England of the 14th century and the visionary, child-like mediæval mind. Internal evidence fixes its date about 1362. Forty manuscript copies of it, belonging, for the most part, to the latter end of the 14th century, attest its popularity. Three distinct versions are extant, known as Texts A, B and C. The probable date of Text A is 1362-63; of Text B, 1376-77; of Text C, 1398-99. The variations in these texts are considerable. An imitation of the poem, called 'Piers Plowman's Crede,' appeared about 1393. The poet's vocabulary is similar to that of Chaucer and several dialects are combined in it, the Midland dialect dominating. The metre is alliterative, long lines, divided into half-lines by a pause. Each line contains strong, or accented, syllables in fixed number and weak or unaccented syllables in varying number. Consult Jusserand, 'Piers Plowman: a Contribution to the History of English Mysticism' (1893).

VISITATION, in an ecclesiastical sense, the visit of inspection by a bishop, archdeacon, elder or other authority to the churches within his jurisdiction. In the Protestant Episcopal churches the term is applied to an annual assembly of clergy and church-wardens, for the purpose of admitting church-wardens-elect to office, reviewing the condition of the parish, answering inquiries relating thereto from the superior ecclesastical authority and receiving a charge from the bishop or his representative. Under the church establishment in England, the annual visitation is of an official as well as religious character and acts of Parliament bearing on Church affairs are then formally communicated to the clergy and laity. The Salesian Sisters are often termed Sisters of the Visitation. There are 21 convents of this order in the United States.

VISITATION, Right of, the act of a naval commander who visits a ship of another nation to ascertain her character, and the object of her voyage. In time of war, a search is likely to follow if the replies to inquiries are not satisfactory.

VISITATION NUNS. See ORDERS, RELIGIOUS.

VISITATION OF THE SICK (ecclesiastical). This is an office of the Anglican Church for the comfort and consolation of sick persons. It is founded on the offices of ancient liturgies and, with some exceptions, is practically the same as Extreme Unction.

VISITATION OF THE VIRGIN MARY (ecclesiastical). A festival celebrated on the second of July, to commemorate the visit of the Virgin to Elizabeth, the mother of John the Baptist, as described in Luke i, 39-56.

VISITATIONS, Heralds', periodical circuits formerly performed by the provincial kings-at-arms in England, to take cognizance of the arms, pedigrees and marriages of the nobility and gentry. The earliest visitation, in pursuance of a royal commission, was made by Thomas Benolti, Clarencieux, 1528-29: thereafter the visitations were repeated at periods varying from 25 to 30 years: the latest commission was dated 13 May 1686, and under it some pedigrees were recorded as late as 1703-04. The records of the visitations contain a mass of historical and genealogical information of great value: they form the principal source of evidence regarding the hereditary right to bear arms in England.

VISITING CARD, a card bearing one's name, and sometimes an address, etc., used to send in as an announcement when calling, and for other social purposes governed by the customs of the time and place. It is probable that some form of evidence of a call on absent friends was used in very early times, perhaps originally among the Chinese or some other Oriental nation. It is somewhat uncertain when European custom first adopted the device, but it is generally stated that visiting cards were first used, in the Western World, by the Germans in the 16th century. The court of Louis XIV, of France, the centre of the fashion and etiquette of the 17th century, seized upon the custom as peculiarly àpropos to the manners of the time, but added many an elaborate touch to the plain German taste in cards, in finish, execution and adornment. Thus, under Louis XV, engravings even of real or fanciful landscapes were added and, later, an autograph signature beneath the engraved picture. When England followed the lead of France in the use of visiting cards, in the 18th century, they came into use everywhere, with a return to their early simplicity; and, while they vary in size, shape and style of announcement, the modern tendency is decidedly in favor of simplicity and avoidance of ostentation.

VISOKO or VISOKI, a town of Bosnia, on the river Bosna, 15 miles northwest of Serajevo. It has a good trade in leather, tobacco and carpets. Pop. about 5,000.

VISSCHER, Cornelis, a Dutch engraver who lived about 1629-62. His portraits, the best known of which are «The Ratcatcher» and «Susanna at the Bath» are among the finest examples of Dutch engraving. In the last 15 years of his life he produced about 150 plates.

VISSCHER, William Lightfoot, American author: b. Owingsville, Ky., 25 Nov. 1842. He

was graduated LL.D. from the University of Louisville, but never practised law. He served throughout the Civil War, and was then appointed to a judgeship in Kentucky, which he held for a few months. Thereafter he was engaged in newspaper work for nearly 40 years, became a prominent public lecturer and acted for several seasons in drama. He is the author of 'Carlisle of Colorado'; 'Way Out Yonder'; 'Thou Art Peter'; 'Fetch Over the Canoe'; 'Ten Wise Men and Some More'; 'Amos Hudson's Motto'; 'The Pony Express'; 'Black Mammy'; 'Harp of the South'; 'Blue Grass Ballads'; 'Chicago, an Epic'; 'Poems of the South'; 'My Lady of the Island.' He has been acclaimed the «Poet of the South.»

VISTULA, vĭs'tū-la (German, *Weichsel*), a river of central Europe, about 750 miles long, navigable from Cracow. It rises on the frontiers of Galicia and Austrian Silesia, on the northern declivity of the Carpathian Mountains, flows first north-northwest through the foothills, then eastward past the town of Cracow, forming from a point about 15 miles below Cracow, the boundary of Galicia and Poland, till it receives the San on the right bank, when it turns northwest through the Polish provinces. A little north of Warsaw it is joined by the Bug; then it flows westward entering West Prussia a little south of Thorn, and after traversing Marienwerder divides into two branches, of which the eastern, the Nogat, empties into the Frisches Haff; the western divides again about five miles from the Baltic into an eastern and a western branch, the latter, the Dantzic Vistula (which is much the larger), proceeding toward Dantzic, the former to the Frisches Haff. A new channel cut since 1895 from the head of the Dantzic branch now carries most of the water directly to the Baltic. The mouths were heavily fortified by the German government. The navigation of this river is important, especially to Poland, though often obstructed by ice or shallow water. The canal of Bromberg connects the Vistula, through the Netz and Warthe, with the Oder. Several navigable rivers empty into it. The area of its basin is about 76,000 square miles.

VISUAL INSTRUCTION is commonly considered as synonymous with teaching through the use of pictorial representations. In a wider sense it includes all instruction by which the material world reaches the mind through the sense of sight. The process is by no means a newly devised one. The human race has at all times depended upon the eye more largely than upon any other organ of sense for learning about material objects.

Photography has been the chief factor in the fuller use now being made of the visual method. By it even the most remote objects of every variety may be represented with a large degree of accuracy, and pictures of them may easily be placed before any observer. The expense involved is relatively very small. Photographic processes of producing plates from which excellent pictures are quickly made in enormous quantities on a printing press have made pictorial expression so common that it no longer attracts special attention. Schools, publishing houses and business concerns of all kinds have been quick to recognize the effectiveness of the visual presentation of ideas and are making very large use of this form of expression. Man's first means of communicating his ideas to others was spoken language. But he soon had occasion to make a record of his notions for the benefit of those at a distance or of a later time, and so invented symbols. These consisted of rude drawings and of characters known as the alphabet. The early pictographs expressed only a few simple ideas. Words formed from the alphabet do not directly suggest ideas. They come to have content only through much study and long familiarity with them. To the spoken and the written word must be added the picture form of expression. In considering the value of visual instruction it is important to recognize the fact that pictures serve not merely to make a pleasing appeal to the eye, but have actually come to be a universally used mode of representing the physical world to the mind. Appreciating this fact, the problem is to determine the mental laws according to which the learner is affected by them and the special fields of usefulness of visual presentation. That the true place of pictures as a means of expressing ideas may be understood and used most effectively there needs to be a clear appreciation of the relative value of language and pictures in conveying ideas. An analysis of the whole body of ideas to which man has occasion to give expression must lead to the conclusion that pictures are best calculated to represent material objects. In other words they present to the mind facts to be perceived. Higher ideals and abstract relations must for the most part continue to be expressed through the medium of language.

All notions of the objective world are gotten through the senses, chiefly sight. The primary function of the mind by which the individual has experience with material things is called perception. The powers of judgment, imagination and reasoning are absolutely dependent upon perception. They will work true only as perception has been clear, exact and vivid. Obviously one's first dealing with an objective field of study should be through observation. Children need to begin their studies through visual aids. More mature minds are dependent upon a visual presentation whenever they enter upon a new field of study that has to do with objective realities.

The perceptive facts that may be acquired through the medium of the eye are form, size, position, which inhere in every object, and sometimes color and sometimes motion. Pictures do not directly convey any other notion. Where the mind seems to see more than these elements, it is only by inference made possible through experience. The quantitative element is an important factor in visualization. Understanding how large an object is requires a known standard of measure. There must be comparison, doubtless involving the function of judgment. One's practical interest in the position of an object or part of an object usually lies in knowing its place in relation to something else already known. Form is dependent upon relative position of parts. The clearness and fullness with which the mind grasps such factors determine the accuracy and vividness of the visualization.

A clear distinction is to be made between

visualizing an object and looking at a picture of it. The latter may be little more than the physical act of keeping the eye directed to the picture. The mind may remain very largely passive. Visualizing is strictly a mental act. It involves the exercise of several mental functions. In the end the phenomenon observed, though absent, is imaged in the mind. The image is more than the recollection of something impressed upon the mind. A small amount of mental reaction may be sufficient to enable the mind to recognize an object when again presented, but a complete visualization involves a full analysis of the phenomenon and a later synthesis of parts. There must be a rebuilding in the mind of the thing observed and the mental image is probably never precisely like the object. The mind appropriates only what concerns its ends or interests.

There is among teachers and others who think upon mental processes an interest in the question of the relation between visualization and imagination. Some would see an opposition between the use of visual aids and imagination. These persons, however, fail to analyze the mental processes involved and to discover the nature of what should be avoided. It is impossible to perceive too much or too accurately. On the other hand true visualization is imagination. Every mental image is made up of perceptive elements. Without them there could be no material out of which to build the reconstructed image. This statement gains force if one keeps in mind the distinction between the mere remembrance of a past visual impression and the construction within the mind of a mental picture, the latter being the highest form of visualization. Reproductive imagination is little more than memory. To visualize has come to be a phrase in common use. It is usually employed as equivalent to "imagine the thing or situation." What the objector really fears is the lack of ability to create entirely new combinations in a visualization of something not corresponding to what has already been observed. This creative power doubtless varies naturally in different individuals and is also susceptible of cultivation. The danger is not so much that the visual presentation will be used too extensively as that its use will be unintelligent. There are limits to the fields of usefulness of pictures as an educational agency. Unquestionably a person may continue so fully absorbed in observation that insufficient attention is given to the exercise of other mental functions. The arguments for the use of pictorial expression must remain unshaken so long as such expression is confined within its fields of special usefulness and full mental reactions are secured.

An incentive for the use of pictorial representation is the belief that it is specially interesting. Interest as a motive for effort plays a large part in the modern educational program. The nature of interest may, however, be misinterpreted and dependence upon it may be carried too far. According to the etymology of the word interest (*inter-esse*) the implication is that the mind is in the object or idea under consideration. Mental energy hangs upon what is actually before the mind. It is developed by the mode of approach through such elements as the mind can easily comprehend, which are necessarily certain objective facts. The objective elements, such as form, color and motion, attract attention, though attention at the beginning is passive and may remain so. True interest on the other hand is an active principle. It is difficult to arouse, particularly in untrained minds, hence with children and uneducated adults objects and their pictorial representations may advantageously be used to attract attention and initiate interest. One must have some experience with an object of study before an interest in it can be aroused. The problem of the educator is to convert into active interest passive attention to the physical elements that for the time hold the mind. Failure to secure adequate mental reaction means the loss of the advantages of the visual presentation.

There is a very direct relationship between impressions and memory. Abstract ideas are not only difficult to acquire but they are not easily retained in mind. The mind is so constituted that it depends upon the law of association. There is a very strong tendency to associate a general notion with a particular illustration of it. So while the mind should move on to the general or abstract it cannot do so without first detecting the truth in some particular concrete illustration of it. The sense presentation, chiefly visual, is surely the easiest if not the only approach to the higher and more difficult idea. Further such idea is again brought into the field of consciousness through recalling one or more of the specific illustrations from which it was originally derived. Without much experience with the material world and the people who move in it one cannot go far in the exercise of the higher function of judgment, reason and restrained, well-ordered emotions. One has but to visualize the ordinary schoolroom in which pupils commonly receive eight or possibly 12 years of their formal education to be convinced that there are forceful arguments in favor of a larger introduction of the visual means of instruction. Even when the picture expresses but a small part of the idea to be presented it may often serve as a suitable starting point about which to build a group of related thoughts.

There is need for recognizing the fact that visual representations like language vary greatly in significance, expressiveness and other respects. The rules of grammar and rhetoric have been fully developed and stated. It is understood that words should be selected and combined with a view to precision, clearness and force. There are rather definite standards for judging the value of oral and written speech. But there is still much carelessness and indifference in the selection and use of picture expression. This condition probably grows largely out of the fact that pictures are so often used merely as supplementary to the language form of expression, that they are commonly prepared by inferior mechanical processes and by persons not thoroughly acquainted with the ideas to be expressed and that those who are supposed to learn from them are content with a very superficial observation of them. The chief standards for selection and use of pictures are their authenticity, truthfulness, expressiveness, quality and attractiveness.

When a verbal statement is made one properly asks what authority there is for it? What weight can be attached to it? So with a picture one should want to know its source. What evidence is there to show that it expresses what is purported? There is particular need for applying this standard to pictures used to illustrate history. On any adequate test many of those appearing in books on history would be found altogether unreliable. The pictures have been thrown in to catch the eye but without having been as critically examined as the text.

A picture may be attractive but untruthful. This is particularly likely to be the case with fanciful drawings where the illustrator lacked specific knowledge of the subject or was indifferent to the criterion of truthfulness. A picture may of course be authentic and yet not truthful, for example, a reproduction of Leutze's 'Washington Crossing the Delaware.' A challenging attitude should be assumed toward a picture both as to its authenticity and its truthfulness. In the matter of expressiveness pictures of all sorts vary as much as do verbal expressions. There is much trash in pictures. Many of them have little significance, while some are worth long study. A picture that is full of significance commands repeated attention. In education the selection of pictures is largely a work of elimination.

The quality of pictorial expression should be judged as critically as that of verbal expression. There is no more excuse for carelessness and indifference in one case than in the other. Rarely does a poorly made photograph or drawing actually give full and accurate expression. A picture is defective to the degree to which the observer is unable to see in it the idea intended to be expressed. Many factors, including quality, enter into the attractiveness of a picture. While a pleasing appearance is very desirable it should not obscure the importance of the other factors. . The tendency is to produce merely an appeal to the eye rather than to the mind.

As to forms or types pictures may be classed as prints, lantern slides and films. Prints are pictures or drawings made by transfer from engraved plates, lithographic stones, photographic negatives or the like. They are used in books, magazines, pamphlets and other publications or appear alone. A stereograph is a pair of photographic prints made in a particular way. They bring out the third dimension or depth better than the single print. They are of advantage only where perspective is an important feature to be observed.

Obviously a print is suitable for individual study rather than for class instruction. It is usually too small to be observed by several persons at the same time.

A lantern slide is a photographic positive on a glass plate. The image is projected upon a screen giving a picture sufficiently large for effective instruction. Slides are pre-eminently the form of pictures suitable for class use for instruction by visual means. The attention of every member of a class or audience can be directed to the same thing at any moment, which is essential to class instruction, and there is ample opportunity for close observation and discussion.

A motion picture consists of a succession of images projected on a screen from a film with such rapidity as to produce the effect of movement. The chief function of such pictures is to tell a story. They are not well adapted for the observation of any of the aspects of material things other than motion. The distinctive place of the motion picture is in the field of entertainment though it may have some supplementary educational value in showing processes when other related facts are known. There is no possible advantage to be derived from the motion picture for representing objects that are static, such as buildings, works of art and physiographic features of the earth. Motion is sometimes so characteristic of a living form or mechanical contrivance as to be in itself an object of interest and when the moving form cannot be examined a pictorial representation of the movement is distinctly useful, for example, for most persons the movement of a seal.

For educational uses, aside from the question of expense, the chief weaknesses of the motion picture are the absence of discussion while observation is going on and a consequent lack of training in observation and in the power of verbal expression. The deeper and more significant features to be observed are overlooked, true mental reaction is weak, and study is superficial. The same results may attend the use of still pictures but are much less likely.

It is important at least, so far as the school course is concerned, to determine for what studies the visual method is best adapted. Obviously its principal field of usefulness is in those studies that deal with physical phenomena that cannot be brought into the schoolroom, such as geography, industries, nature study, physiography and art. Few pictures can be used to advantage in teaching mathematics, though success in mathematical studies doubtless depends very largely upon ability to visualize. The chief elements dealt with are size, form and position. Of these ideas the quantitative stands foremost, ideas of how much, of more or less. Some unit of measure is visualized in relation to the thing measured. A pupil who visualizes readily has little trouble with geometry, while one who depends chiefly upon verbal memory struggles with it in vain.

Spelling is in large part a visualization of the form of words, secured particularly by attention to the construction of syllables. Hence spelling is now learned more by observation than by the repetition of letters in a fixed sequence. The form of words is visualized.

Reading as an exercise in learning to recognize and pronounce words is not taught through pictures, though learning the content of certain words is to a large extent acquired by association of word and picture. Further, after a pupil has acquired some facility in the more mechanical aspects of reading, the interpretation of a picture may be made a powerful incentive to read for thought getting.

In the field of literature pictures should be used sparingly and with caution. Language is pre-eminently the medium in which literature is expressed. The material objects mentioned are but incidental and for the most part would be readily visualized if visual instruction has had its proper place in those studies where it

is most applicable. Such value as pictures have in this study is altogether secondary, such as stimulating an interest and creating a motive for reading. A motion picture may give in part someone's interpretation of the story, which is but the literary skeleton, but it tends to relieve the pupil of the need of effort and hinder his acquiring insight into literary expression by substituting a lower objective. The photoplay may doubtless express dramatic situations and acts but is not in itself literary expression. To elementary training in the use of language observation of pictures is a great aid, for it leads to a body of definite notions to be expressed. If observation has been orderly, expression will be clearer, more accurate, more vivid and better organized. This is on the assumption that the learner is actually required to prove what he has gotten from the visual presentation.

History introduces so many factors that lie outside of the observation and experience of the student that a visual presentation is extremely helpful, but in this field of study, pictures should be selected with the clearest understanding of the purposes they are to serve. It is useless to expect to re-act history before the physical eye. The study calls for true visualization, the creation or building of mental pictures out of the material which the student collects. So far as pictures truly and authoritatively represent material features belonging to an earlier time such as places, utensils, dress, monuments, customs and modes of living, they are an aid to the student in his attempt to put himself into the historical environment. The possibility of using visual aids successfully becomes small when the student reaches such vital things in history as character, ideals, motives of action, political, civil and social problems, policies and the like.

In the natural sciences, nature study and geography, and any other study that deals with material objects, pictorial expression may be used with particular effectiveness and become necessary for positive results when the objects of study cannot be observed directly or through types. Practically every feature of artistic productions can be expressed by pictures and drawings. Form, size and position are the elements that enter into every class of art conception and color is usually an important element. All these factors may be perfectly represented by still pictures and here verbal description fails utterly. The field includes painting, sculpture, architecture and the minor arts. A verbal description of Amiens cathedral would be quite unintelligible to one not conversant with architecture.

Too much may be claimed for the visual presentation but on the other hand the importance of it for certain purposes cannot be denied. After the fields of its special usefulness have been determined and the aids have been selected with due reference to their value it still remains to use them in a way suited to the purposes to be attained. What is the visual method?

At the outset, there is some difference of opinion as to whether pictures should be used merely as illustrations of a general statement of a truth or as the means of approach to an understanding of a truth. The practice of the former is probably the more common. It must be admitted that there is a place for each, but the latter is more in need of encouragement. The studies most in need of visual presentation are generally acknowledged to be inductive in character. In the use of pictures then let observation come first. On the whole, reading may better follow than precede observation. This is particularly true when there is an intensive use of pictures with special reference to teaching pupils how to pursue the study rather than to give him merely some general information about it. Granting that the primary feature of the method is observation one has only to follow the recognized rules for observing. The procedure is not essentially different whether the object itself or its pictorial representation is observed.

In leading pupils to study a picture it is usually advisable to give them a start. Avoid a question like, "What do you think this picture shows?" for by such a question attention is scattered instead of concentrated and there is likely to be guessing. Rather direct the class to note a particular feature and tell about it. Have a definite purpose in using a picture. It probably expresses some facts not pertinent to the immediate end in view. Do not suppress a disposition on the part of the pupil to see for himself, but lead him to report his observations along chosen lines.

First ascertain just what perceptive facts are shown. When these have been clearly and accurately expressed, call for judgments. What does the pupil infer that is not actually shown? Some additional points of interest merely associated with the object may be stated, but in doing this the instructor has departed from a visual presentation. In the main leave such additional information for separate presentation or for the pupil to get from reading.

A picture is not seen as a whole. It must first be examined as to the features that make it up. It is exceedingly important that beginners be led to make their observation in such an orderly way that the mind will not waver in its search for the content of the picture but will quickly detect one feature and then pass on to another. Such ability to read a picture is developed rapidly under proper guidance.

The following are some of the advantages to be derived from the proper use of visual aids to instruction: a keener interest in the subjects studied, a growth in voluntary attention, clear and more definite percepts of the things involved, truer and more vivid mental images, much better results in oral and written expression, increasing ability to grasp new truths when presented.

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VISWÂMITRA, vĭs-wâ'mĭ-tra, personage prominent in the legendary history of India; a descendant of King Purûravas, who was an ancestor of Kusika. According to several accounts, Viswâmitra was maternal uncle of Jamadagni. He had 100 sons, 50 of whom were, for an offense that they committed, degraded by him to become outcasts, and the progenitors of the Andhras, Pundras, Sabaras, Pulindas, Mûtibas and other frontier tribes, which in the Vedas are called Dasyus, or robbers (see VEDA). His fame is founded chiefly on the remarkable fact that though by birth a Kshattriya, or a

man of the military caste, he gained admission into the Brâhmanic caste, after a long contest with the Rishi *Vasishtha*. A kind of consecutive biography of Viswâmitra is given in the first book of the Râmâyana. Its substance is as follows: Roaming over the earth with his armies, Viswâmitra came to the hermitage of Vasishtha and was received by the saint in the most sumptuous style. Vasishtha could afford thus to entertain the king, because he possessed a fabulous cow of plenty, that yielded him everything that he desired. Viswâmitra becoming aware of the source of Vasishtha's wealth, wished to possess the cow, and offered to purchase her from Vasishtha. The saint refused the offer, and the king seized her, intending to carry her off by force. But the cow resisted, and ultimately displayed her supernatural powers in producing from different parts of her body numerous peoples, by whose aid Vasishtha destroyed Viswâmitra's armies. The king then had recourse to his magical weapons, but he was defeated by those of Vasishtha; and in his humiliation he exclaimed: 'Contemptible is the might of a Kshattriya; a Brahman's might alone is might;' and to attain the rank of a Brahman he immediately resolved to practise the utmost austerities. Accordingly he went to the south, and performed severe penance for 1,000 years. At the end of this period, the god Brahman appeared, and announced to him that he had become a *Râjarshi*, or royal Rishi. Not satisfied with this degree of holiness, Viswâmitra continued his austerities, and at the end of another 1,000 years the god Brahman conferred on him the dignity of a *Rishi*. Not yet satisfied, he went on practising still fiercer austerities, though interrupted by the allurements of a heavenly nymph whom the gods sent to him for that purpose: thus he attained the rank of a *Maharshi*, or great Rishi. After another 2,000 years of still more rigorous penance (again interrupted by the gods, as before), the gods, headed by Brahman, came to acknowledge that he had now become a Brahmarshi, or Brâhmanic Rishi; and Vasishtha himself was compelled to acquiesce in the result. For other legends relating to this contest, consult Muir's 'Original Sanscrit Texts' (Vol. I, London 1858).

VITA NUOVA, vē'tä noo-ō'vä (It. 'The New Life'), an early work by Dante, completed probably in 1307.

VITACEÆ, a natural order of exogenous plants, known also as Ampelideæ and Sarmentaceæ, of which the common vine may be regarded as the type. About 260 species are known, natives of warm and temperate climates, all shrubs, mostly climbing; with simple or compound leaves, with or without stipules, lower leaves opposite, upper leaves alternate; the flower stalks racemose, opposite to the leaves, sometimes as in the vine, by abortion, changing into tendrils. The only plant of the order of much value in an economical view is the vine; nor are there any fine fruits except the grape, and that of species so closely allied to it as to be probably mere varieties. Species of the genus Cissus and of Ampelopsis are sometimes planted for ornament. Cissus antarctica is the Kangaroo vine of New Holland; and Ampelopsis quinquefolia, often called Virginia Creeper, is a frequent ornament of the fronts of houses both in America and Europe, attaching itself to the wall by tendrils terminating in a peculiar kind of sucker and climbing to a great height.

VITAL STATISTICS. By this term is meant the statistical record of facts which pertain to life and death in any given community. The term is sufficiently comprehensive to include the records of the smallest kind of a village, or those of a nation, or even of all the nations of the world. Vital statistics may even be said to constitute a science, and such a science, indeed, as requires very considerable knowledge in mathematics and mnemonics to master it. It is well defined in the statement that it «comprises analysis and synthesis of facts concerning the life-history of populations.» Its practical utility in the history of communities is very great, and is increasing every year. Any community which pretends to keep a record of its doings must have vital statistics, hence all civilized nations must have them. It not only enables a nation to know where it stands, but where it stands with reference to other nations. It informs those who seek such information as to the prevalence of disease and death, it suggests sanitary measures for the relief of unsanitary conditions, it encourages habits of careful observation and thoughtfulness on the part of those by whom statistics are provided and it is the foundation for the census, a regular system for which was first established in the United States. The early censuses were taken for political purposes, but in the seventh census of 1850 many new data were introduced, particularly mortality records. In 1910 the attempt to enumerate deaths was discarded, reliance being placed upon the results of actual registration in the registration area. This area for deaths, up to 1915, included 25 States, or 4.13 per cent of the area of the country, and 66 per cent of the population. Among the Southern States it includes only Kentucky and Virginia and part of North Carolina. While the birth registration is more defective than that of deaths it is fairly well known that more than 2,500,000 of babies are born in the United States every year though less than half of them are recorded. A registration area for births has not yet been organized; many States have good laws on this subject which, however, are not enforced. A model law was passed in Pennsylvania in 1905, one provision of it being that primary schedules for vital statistics must be uniform. A standard death certificate is now used in nearly all of the United States. Now the census includes not merely a count of the people every 5 or 10 years, in a city, State or nation, as anybody knows who has ever examined the bulky volumes of the census of the United States, but many other matters of great importance. The registration of vital statistics in the United States belongs to one of the bureaus of the Census Department. It collects statistics of death obtained from State registration and is supplemented by municipal returns from cities in States which as yet have no efficient registration laws.

Vital statistics when well prepared and accurate give valuable information, not only in regard to disease and death, but as to the number of the people and as to birth, age, sex,

color, race, occupation and conjugal relations. They are also the basis of data for life insurance calculations and they are concerned with the estimation of ratios in regard to births, marriages and deaths and with the manipulation of figures for making a great many important deductions. It is essential that these fundamental statements should be accurate but unfortunately this is not always the case. There is, therefore, an element of possible error in vital statistics which must almost always be considered. They, however, usually permit conclusions which are approximately true, and by the aid of corrections they can be brought still nearer to the truth.

The vital statistics of the United States are by no means complete for the entire country. Bulletin 109 published by the Census Bureau 1 Oct. 1911, and which gives the mortality record to 1 Jan. 1911, declares that in only 21 of the States are the mortality statistics complete (at date), while in 16 other States they are given only for one or more of the large cities. This constitutes the so-called registration area of the United States. Other tables of vital statistics are equally incomplete and for some of the States they are wanting altogether. Much remains to be done, therefore, to place these data upon a basis which is as scientific and as accurate as the best records of the nations of Europe. The United States is practically the only civilized nation which lacks an effective system of vital statistics. It is a subject which might well be taught in the medical schools, under the supervision of the government. It is to be hoped that this end will be attained in the census of 1920. The subject will be considered in this article under the divisions of population, birth, marriage, death, disease and life tables.

Population.— This is the first fact which will be sought in preparing the vital statistics of any community. It is obtained by the census which is taken once in 10 years by the nation, once in five years or oftener by some of the States and cities. It is inaccurate in various localities, sometimes from the dishonesty or incompetency of the enumerators and sometimes from the fault of those from whom information is sought. Revision of the last census in many of the cities and towns showed remarkable variations from the figures which had been obtained by the official gatherers. When the population of two or more places is known we have the first factor or element for making comparisons between these places.

In the interval or intercensal years, when a direct count is not taken, an increase of population is usually presupposed, and is estimated by comparison of the two previous census enumerations. This is an inaccurate method, furthermore a decrease instead of an increase is often known to be the fact. Increase of population, for a given period, is due to the excess of births over deaths, as recorded in the archives of the board of health, or other office of registry, and to this must be added the excess of those who come into a community over those who leave it. Diminution of population is due to excess of deaths over births and to removals from the community.

Population may increase slowly or rapidly and is greatly influenced by prosperity or the reverse, by sickness, by climatic conditions or by the advantages or disadvantages of residence in the given community.

Make-up of population refers to the relative numbers of males and females, and their ages. It also includes details as to color or race, and nationality. In many communities, especially in those which are large and highly organized, there is an excess of females over males. This is especially apt to be the case in manufacturing communities, while in pioneer settlements there is always an excess of males. In villages and small towns, especially in farming communities with their preponderance of outdoor work, this is also the case.

Age statistics are usually arranged according to decades, except that the infant population includes those who are under one year of age. Still-births, of course, make no addition to the population, but a record of them is important for it may lead to deductions which are of great significance for a given community. Age statistics have a very important relation to mortality statistics. The highest mortality rate is in infancy, and as this rate in some localities is extreme, it should call for study and investigation in such localities, especially when the total mortality rate is unusually high.

Color is an important detail in the records of population. There are many communities in which there is but one color, black, white, red or yellow, but on the other hand the United States is a very composite nation, and hence there is a very positive necessity for the color distinction for a large portion of the population. The statement applies even to a greater degree in regard to nationality. As there may be 20 or more nationalities in a single city the necessity for classification is apparent enough.

The sparse population in certain farming districts, especially in the less fertile or the newly-settled portions of the country, or in those which are unfavorably located from sanitary or commercial conditions, the crowded population of the great cities where opportunities for labor are abundant, the overcrowding of the slums and the abnormal housing of multitudes of human beings in many of the factory cities and villages furnish material for vital statistics which are invaluable from a sociological standpoint. They are also the basis of some of the most educating calculations with regard to mortality and morbidity rates.

The rule was formerly accepted by statisticians as generally applicable that the greater the density of population the higher the death rate, but the many sanitary improvements in housing arrangements in recent years, especially in localities where the density of population is great, have considerably modified this rule. The mortality rate in such localities is now much lower than it was a few years ago and this improvement applies not to the United States only but to the civilized world. "Public health is purchasable. Twenty-five thousand lives can be saved in New York State within the next five years." (H. M. Biggs, commissioner of health of New York.)

Statistics in regard to population are taken periodically or intermittently, while those which relate to birth, death, marriage and disease, which are sometimes called registrar's returns, are constantly in the process of making. Every community, large or small, has them as an

essential portion of its records or archives. In the record of diseases, especially those which are of an infectious or contagious character, the list is increasing from year to year. It is easy to see that many valuable deductions and comparisons can be made from such records, especially in regard to sanitary and hygienic improvements. In all places of any considerable size they are now under the control of boards of health which are usually endowed by the legislatures with ample legal powers.

In using statistics of this character it is not only desirable that they should be accurate but that they should be extended over as long a period of years as possible. This permits comparisons, the establishment of averages and the drawing of conclusions which would not otherwise be possible. In making comparisons it must be remembered that data should be of the same class or kind, for only such admit of comparison.

Births.— Making a record of births is a custom which is at least as old as civilization. It was a standing custom in the Roman Empire at the foundation of the Christian era, to go back no further, and has been continued ever since by the town or parish clerk or notary, or by the clerk of the church. It is now one of the functions of the board of health and physicians, midwives and others are authorized or compelled by law to report all births within a given time of their occurrence, usually within one or two days. These records are usually inaccurate because those who should report them are frequently careless and negligent about it, or the authorities are careless in enforcing the law. Many births which are unattended by physicians or midwives are never recorded. A proper penalty, but not one which is too severe, ought to be inflicted when this law is disobeyed. This trouble could be remedied in part, at least, by having vital statistics returned by those who are engaged in public health nursing. However true it may be that physicians ought always to make birth returns, the very busy and the very careless will not do it accurately and promptly although there is a risk of losing their license to practice.

Bearing in mind the facts which have been mentioned and remembering also that in some of the States there is no law requiring the registration of births, deaths, marriages and sickness, the statement concerning the imperfect character of our vital statistics and their consequent want of value will be found correct.

Crude birth-rate is estimated at so many per thousand of the population. The birth-rate must also be considered in preparing tables with reference to the number of women of child-bearing age and with reference to legitimacy and illegitimacy.

Still-births, as already stated, do not form an element in population, but they must be registered. They have been estimated at from 2.5 to 4 per cent of all births, and this estimate is probably too low. There should also be a record of abortions though this would undoubtedly be very difficult to obtain, particularly on account of the great number of criminal abortions. If it were possible the entire number of pregnancies per year should be tabulated.

The birth rate of different countries or cities or States is often a matter of study and comparison. It is usually higher in the cities than in the country. The rate is higher when times are prosperous than when they are adverse, as economists noted a century ago. It is higher in manufacturing communities than in those which are residential, higher among the ignorant than among the intelligent.

The birth rate of the countries which were engaged in war is of exceeding importance and will be increasingly so in the near future. Already the French government is offering premiums to women who bear two or more children, whether legitimately or illegitimately, and other nations which have lost so heavily in men will probably do the same. The importance of accurate registry will be very great in all these countries.

A high birth rate often, but not necessarily, means a high death rate, for the mortality in infancy, as already stated, is higher than at any other period of life, but a high birth rate may also mean that the population is a vigorous one. A low birth rate may signify a low death rate but it may be followed by a high death rate.

For a number of years the birth rate in most of the civilized countries of the world has been declining, and in view of the increasing cost of living in all of them it will probably continue to decline. It is declining in England, it is declining in the United States, while it has been declining in France for so many years that it causes persistent alarm to her government.

Marriages.—A record of marriages is equally as important as that of births, and the custom of keeping it is almost equally ancient. It is the bond of the family and one of the most important props of civilization. Both Church and State have kept marriage records and continue to do so. It seems unnecessary that there should be a double record.

In countries in which Church and State are united, the Church will insist upon its right to this record, and in those which are like our own, and in which Church and State are separate, the right of the State to keep it should be insisted upon. It is so insisted upon wherever there are boards of health and a license or permission to marry must first be obtained from the local government, while the record of the marriage performance is preserved.

A custom which is increasing in its frequency is the giving and receiving of a certificate of health, after a suitable examination, by those who are about to marry. It is a desirable custom and if it were universally insisted upon like the marriage license it would prevent a great deal of the disease which follows marriage between those who are physically unfit. Tables of vital statistics should, for completeness sake, include the physical condition of those who marry, at the time of their marriage.

Marriage rates, like birth rates, are estimated at so many per 1,000 of the population, the number of persons who are actually married being double the number of the marriages. A better record would include those who are of marriageable age. The marriage rate varies and fluctuates in accordance with certain conditions. It increases in times of commercial prosperity with abundance of labor, and in communities in which the occupations are healthful and productive of vigor and vitality. It

diminishes during hard times, during war and at times when the physical condition of those who are of marriageable age is lowered by disease, especially by epidemic disease or by disease which results from unhealthful occupations. In many communities there are more marriages during the summer than during the winter. An unusually high marriage rate may be followed by one which is correspondingly low, as when great business prosperity is followed by great business depression. This is simply the verification of a well-settled economic law. It has been observed that more women than men marry several times during their lives. This must mean either that the inclination to marry repeatedly is more common in women than in men, or that women, more than men, feel the need of a home and of other things which marriage is supposed to afford, or that marriageable women live longer than marriageable men.

The age at which marriage is consummated is greater now than formerly. This is perhaps due to the increasing sense of the responsibilities which are connected with marriage, which is a hopeful indication, or it may be due and often is due to inability to support a family in early life, in consequence of the increase in the cost of living, according to present standards. The fact that so many women are now working at gainful occupations, and that so many elect a career from their own efforts, in preference to the cares of a household, is an additional reason for the change in the marriage rate. The marriage age is an important factor in reference to population. Children who are born of mature parents are much more likely to be vigorous and healthy than those of the immature and the aged.

The statistics of divorce are intimately associated with those of marriage. In a country like the United States, in which divorce prevails to such an alarming extent, it is especially desirable that the records should be made with the greatest care and accuracy. The spreading of such facts before the people ought to act as a deterrent to this great evil and to develop habits of greater thoughtfulness and wisdom before marriage is entered into.

The ratio of divorces to marriages in the different States is a matter of importance for record, and so is the actual number of divorces which are granted in the several States, and the relation of that number to the population in each State.

Deaths.— The death record, or the mortality statistics, is probably prepared with a greater degree of accuracy than are the other records. For various reasons births and marriages may escape the record, whether intentionally or unintentionally, but the record of a death is not easily evaded.

Those whose duty it is to report deaths — doctors, midwives and others — are not likely to neglect this duty, and in those cases in which death occurs from violence or from unexplained causes, the coroner, who is an official in every county, has a responsibility in making the record which he is unlikely to neglect.

The following table of death rates in the registration area of the United States, which, as before stated, embraces 21 States and one or more cities or towns in 16 others, is interesting and shows the comparatively low mortality rate throughout a large portion of the country.

DEATH RATES FROM ALL CAUSES PER 1,000 OF POPULATION.

AREA	Annual Average 1900–11	1906	1907	1908	1909	1910
Registration area..	15.8	15.7	16.0	14.8	14.4	15.0
Registration cities.	16.8	16.9	17.1	15.7	15.4	16.1
Registration States.	15.5	15.7	15.9	14.7	14.2	14.7
Cities in registration States.....	17.0	17.4	17.5	15.9	15.4	15.9
Rural part of registration States....	13.8	13.7	14.0	13.3	13.0	13.4
Registration cities in other States...	16.5	15.6	16.3	15.4	15.6	16.9

The death rate of a community is the ratio of the deaths to the entire population, and the unit of time is one year, though death rates are stated and also computed for shorter periods. In many States the board of health publishes a weekly or monthly bulletin of deaths in connection with other vital statistics. In comparing the death rates of different localities the rate per year 1,000 of population is the measure of comparison. The death rate may be found by dividing the actual number of deaths by the number of thousands in the population.

This is the crude death rate and in many places, especially large cities or places in which there are large institutions, such as hospitals, almshouses and penitentiaries, it is decidedly inaccurate.

Deductions must, therefore, be made for the deaths in such institutions, which are usually far more numerous than in the community at large. Additions must be made if any considerable numbers of the population have gone to other places and died there.

Suppose, for example, that a large number of people with tuberculosis in an advanced stage were transported to another place, and died within the period for which the death rate of the first place was taken. It would manifestly be unfair to charge this mortality to the second place in preparing the death rate of the first.

The death rate should also be analyzed and modified with reference to age, sex, race, occupation, density of population and any unusual influence such as an epidemic, an earthquake, or any other abnormal experience.

The influence of age in such a computation is very considerable, when the deaths include a large number of infants, or a large number of very old persons. Infant mortality varies between 90 and 300 or more per thousand births. In the crowded tenement houses, in the homes of vice and intemperance, among the children of diseased parents, and during the heat of summer the death rate among infants is always very high. In manufacturing towns it is very high but it varies with the town.

Thus in Fall River, Mass., with its overcrowded tenement houses, the rate is 239.7 per 1,000, while in Lynn, Mass., where the factory people have better pay, better houses and more salubrious work, it is only 140.7 per 1,000. In

Boston, with its intelligence and all its civic advantages it is 188.2 per 1,000, and for the entire State of Massachusetts it is 160.4 per 1,000.

Causes for high infant mortality are premature birth, heredity, intemperance, early marriage, neglect, carelessness, ignorance, bad food, unsanitary surroundings, bad industrial conditions and infantile diseases.

The influence of sex upon the death rate is noticeable in those communities in which females predominate in the population, the average life of females being greater than that of males, except between the ages of 10 and 20.

The influence of race is becoming more and more striking as the higher races acquire greater freedom from morbidity and greater longevity. The less favored races are still very sensitive to certain diseases, particularly in crowded cities, in unsanitary surroundings, and when bad habits are acquired. The mortality among negroes is very great, especially from such diseases as tuberculosis and the venereal diseases, though there has been very great improvement in this direction, especially during the last 15 years. Indians have a high mortality rate as they adopt the habits and customs and vices of civilized life, though education is also bringing improvement to them. The Chinese are far less influenced by unsanitary conditions than either negroes or Indians.

The influence of occupation upon disease and mortality is just beginning to be adequately realized. There are many occupations which will produce disease and shorten life, no matter what safeguards may be thrown around them; there are others which are and always will be hazardous to life and limb, there are yet others which can be made relatively safe when there is greater interest in the welfare and happiness of human beings than there is in exploiting them as a means of making money.

Those who work in certain kinds of phosphorus are bound to suffer injury under any possible precautions, those who put up the frames of steel buildings, who work on telegraph poles and who handle electrified wires are always in danger and those who are grinders of tools are great sufferers from disease, but their work can be so safeguarded that the danger may be eliminated to a great extent.

Some of the occupations which have a large element of danger, in addition to those which have been mentioned, are those of caisson workers, in which the workers must sustain a pressure of five or six atmospheres, miners, molders, and slaters, of workers in iron furnaces, in potteries, in chemicals and metals, in electrical establishments, etc. A very large class of diseases are known as occupational diseases and the publication of statistics upon such subjects is doing much to enlighten the public in regard to the need of drastic legislation and regulation concerning them.

It would hardly seem necessary to comment upon the influence of density of population upon mortality, so evident is it to anybody who has given it the slightest attention. It is not merely the crowding which induces morbidity and mortality, it is the accompaniments — unsanitary conditions, bad air and what is almost inseparable from them, ignorance, immorality, intemperance and poverty.

Causes of Death.— These are usually considered from the standpoints of diseases and injuries, but there are many deaths which do not seem to be attributable either to disease or injury, as in the case of those who die in extreme old age, without pain, without sickness or injury, with nothing but a sudden stopping of the machinery, like the running down of a clock.

The classification and record of diseases and injuries as causes of death is very important and is becoming more and more elaborated by boards of health, throughout the country. In preparing statistical tables the causes of death are noted as a ratio of mortality from all causes, or as a definite proportion of the living population.

In census bulletin 109, which has already been referred to, the following rate of mortality is given, from 20 causes, in the order in which the relative number of deaths occurred: (1) Tuberculosis, (2) Organic Diseases of the Heart, (3) Diarrhœa and Enteritis (at all ages), (4) Pneumonia (lobar and undefined), (5) Acute Nephritis, (6) Accidents, (7) Cancer and other Malignant Tumors, (8) Cerebral Hæmorrhage, (9) Broncho-pneumonia, (10) Premature Birth, (11) Congenital Debility, (12) Old Age, (13) Typhoid Fever, (14) Bronchitis, (15) Diseases of the Arteries, (16) Diphtheria and Croup, (17) Suicide, (18) The Puerperal State, (19) Other Diseases of the Stomach excepting Cancer, (20) Diabetes. This table is not very complete, but it may give to the public at large a general idea of the relative mortality from these particular causes.

Climate and temperature have much to do with the death rate. Thus it has long been observed that the lowest mortality is that which occurs in the beautiful month of June, while the highest is in blustering March, when so many people, especially among the aged, are enfeebled as the result of the severities of the winter.

Disease.—An important part of the statistics of boards of health is the registration of infectious disease. Beginning, as it did years ago, with the registration of smallpox, it was quickly followed by the registration of the diseases which are known as Zymotic, including those which are so common during childhood, measles, mumps, scarlet fever, diphtheria, whooping cough and chicken pox.

The necessity for enforcing the law in regard to reporting and recording these diseases is quite as great as the necessity for a rigid quarantine. Personal feeling or prejudice should play no part in a matter like this which has so great a bearing upon the health and well-being of the entire community.

Public Health Nursing.— This is an occupation but recently established. It means that the trained nurse goes into the homes of the poor, the ignorant and the dirty where vital statistics of importance are constantly available, and statistics also which have a decided bearing upon the welfare of the entire community. It would seem especially desirable that those who are engaged in this work should always have with them blanks for the collection of such important data. They could certainly gather many important facts which otherwise would be lost, including legitimate and

illegitimate births, infectious diseases, removals on account of disease, deaths especially among infants and stillbirths. Both in large and small cities and villages where this service has been established should this plan be carried out. It would be a great assistance to doctors and in many instances would provide the necessary correction for their defective returns.

Life Tables.—Life tables are prepared for the purpose of estimating the probabilities of life and death. They are of importance in all interests in which it is necessary to forecast the future of large numbers of people for commercial or other purposes. They are indispensable for life insurance companies since they enable them to fix their insurance rates upon a basis which has been found to be sufficiently accurate for business success, during a long series of years, and with constant observation and study.

In constructing a life table the factors which are necessary are the population, the age and sex distribution, the returns of death for a year or a series of years, arranged according to sex and age at death, and certain mathematical formulæ.

These tables, together with certain necessary corrections, permit the determination of the following propositions:

(1) The mean lifetime. This is the sum of the ages at death, in a given community, divided by the number of deaths.

It becomes reliable only when the constitution of the population is uniform and the observations are carried over a long period.

(2) The probable duration of life. This is the age at which one-half of any number of children who have been born will have died, so that they will have an equal chance of dying before and after that age. It is also called the equation of life.

(3) The mean duration of life. This is the probable duration of life from the date of birth.

(4) The expectation of life, or the mean after-lifetime. This is the average of years which an individual of any given age will live, as shown by a life table.

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VITASCOPE. See BIOGRAPH.

VITEBSK, vē-tĕbsk', West Russia, (1) the capital of a province of the same name, on both sides of the Dvina, 70 miles northwest of Smolensk, and 380 miles south of Petrograd. It has more than 30 churches, including six Roman Catholic, two synagogues, an old palace, a theatre, a gymnasium and a hospital, manufactures of mead and leather, and an active transit trade. Pop. (1918 est.) 112,000. (2) A western province surrounded by Pskov, Smolensk, Mogilev, Minsk, Vilna, Kovno, Courland and Livonia; area, 16,983 square miles. The surface is in general hilly; in the depressions are numerous marshes and more than 2,500 lakes, of which the largest are Lubahan, Rasno, Nevel, Sebesh and Osvea. The chief rivers are the Dvina, Mesha, Kasplja, Ulla, Drissa and Evst. The soil is far from fertile, and the harvests, except under the most favorable conditions, are insufficient for the wants of the population. The principal occupations are agriculture, cattle rearing, hunting and fishing, besides tanning, weaving, and the manufacture of brandy and tobacco. Flax, linseed, hides, building timber and fancy wares are exported. Pop. 2,000,000.

VITELLIUS, vi-tĕl'ĭ-ŭs, **Aulus,** Roman emperor; b. Rome, 24 Sept. 15 A.D.; d. there, 22 Dec. 69 A.D. He gained the favor of Tiberius, Caligula, Claudius and Nero in turn, though he was possessed of neither ability nor ambition, being a man of profligate character and a glutton. In 68 he was sent by Galba to command the legions in Germany, was proclaimed emperor in January 69 by his troops, who murdered Galba, and in July 69 he entered Rome as emperor. He was noted for gluttony and other excesses, spending enormous sums for these purposes, and made no preparation to meet the forces of Vespasius, who had been proclaimed emperor by the troops in the East and was advancing upon Rome. His army proved indifferent to his fate, he was dragged from the palace by a common soldier, and put to death in the Forum.

VITELLUS (Latin *vitellus*), the yolk of an egg. In the domestic fowl the egg yolk consists of casein (forming 14 per cent), albumen (about 3 per cent), fats, some of which contain phosphorus (about 30 per cent), a little grape-sugar, and mineral constituents (about 1.5 per cent), in which there is great preponderance of potassium compounds and phosphates. Of the pigments of the yolk we know only that there is both a yellow and red pigment, and that one of them at least contains iron. As a food, the yolk is one of the most highly concentrated forms of nourishment. In pharmacy it is employed for administering substances insoluble in water (e.g., the oils and resins in form of emulsions). See EGG.

VITERBO, vē-tĕr'bō, Italy, an episcopal city in a beautiful and fertile valley in the province of Rome, 42 miles northwest of the city of Rome. The chief edifices are a Gothic cathedral containing the tombs of four popes, and numerous fine paintings; an ancient and dilapidated episcopal palace; the Palazzo Pubblico, etc. The trade is chiefly in sulphur and iron. About two miles from the city are the celebrated sulphur baths of Viterbo which was the chief town of the allodial possessions of the Countess Matilda, which were given by her to the popes, and formed part of the patrimony of Saint Peter. Pop. about 20,000. There are manufactories of paper, playing cards, leather and textiles.

VITET, vē'ta, **Ludovic**, French author: b. Paris, 18 Oct. 1802; d. there, 5 June 1873. He became a journalist and litérateur and in 1830–51 also held various posts in the French civil service. From 1871 he was representative of Seine-Inférieure in the National Assembly, being elected vice-president of the assembly in Feb. 1871. In 1845 he was chosen to the Academy. He published four dramatic poems dealing with French history, 'Les Barricades' (1826); 'Etats des Blois' (1827); 'La Mort de Henri III' (1829); and 'La Ligue' (1844). But his chief works are in prose, and largely historical in character. Among them are 'Fragments et Mélanges' (1846); 'Essais Historiques et Littéraires' (1862); 'Etudes sur l'Histoire de l'Art' (1864); 'Lettres sur le Siège de Paris' (1871); 'Études Philosophiques et Littéraires' (1874); and 'Le Comte Duchatel' (1875). Consult the notice by Guizot in the posthumous 'Etudes Philosophiques et Littéraires' (1874).

VITEX, a genus of trees or shrubs belonging to the *Verbenaceæ* and widely distributed in warm climates. The leaves are opposite and are usually palmately compound with three to seven leaflets. The flowers are of medium size, with a short tube and oblique, five-cleft limb, which is sometimes slightly bilobate. They are arranged in more or less dense, branched cymes and are purple, blue, white or yellowish. The handsome, deciduous shrub, *Vitex agnus-castus*, native to the shores of the Mediterranean, has many popular names, such as Abraham's balm, or monk's pepper-tree, but is particularly known as the chaste-tree, or agnus-castus, from its suppositious virtues in the way of dispelling love and preserving virtue. Its leaves are aromatic, its sap is said to be poisonous and it is much cultivated on account of the paniculate cymes of bright, bluish-purple flowers; it is not hardy, however, north of Philadelphia.

Several species of Vitex produce valuable wood, as, for instance, the lignum-vitæ of Queensland (*V. lignum-vitæ*) and the puriri, or New Zealand teak (*V. littoralis*). This last is a robust tree, sometimes five feet in diameter, yielding short lengths, often curved, of a brown, heavy, durable timber, suitable for shipbuilding and for other purposes, and considered to be imperishable in water. The flowers on its spreading branches are nearly an inch long and are hairy and dull-red in color. *V. capitata* is the bois lézard of upper South America. The evergreen, *V. pubescens*, and the *V. umbrosa*, of the West Indies, are known respectively as the tree-vitex and as the box-wood or fiddle-wood. *V. trifolia* is known in India as the wild pepper-tree and yields a sweet, greenish medicinal oil. The aromatic leaves of *V. negundo*, of the same country, are believed to alleviate headache, and a vapor bath is prepared from them for the benefit of fever and rheumatism; while its ashes are largely employed as an alkali in dyeing.

VITICULTURE, or **VINE-GROWING**, The vine is any climbing plant, especially if shrubby, as the hop-vine, the vines of melons; but the name particularly belongs to a plant of the genus Vitis of the natural order Vitaceæ, having pentamerous flowers (five-toothed calyx, five petals, five stamens), and the petals united into a kind of hood, and deciduous. The most important species is the grapevine (*vitis vinifera*), from the fruit of which wine and raisins are made. Until the ravages of the Phylloxera made it important to secure a more vigorous stock, this was the only species planted, to any extent in Europe. Owing either to inherent weakness of the plant or to lack of suitable climatic conditions, varieties of this species do not thrive in the United States except in California and possibly a limited area in the South.

The grapevine has large, angular, lobed, toothed, and more or less hairy leaves. The stems are numerous and branching, very long, and of rapid growth, with many tumid joints, the outer bark readily splitting and peeling off, the woody tissue abounding with vessels of large size, from which, at the seasons of active vegetation, if the branch is wounded or cut across, the sap pours in prodigious quantity. The fruit-stalks, much branched, are opposite to the upper leaves, or in their stead are tendrils. The flowers are small, greenish white, and fragrant. The fruit is a round or oval berry, two-celled and four-seeded, varying much in size and color — in the small Corinth or Currant Grape, about one-fourth of an inch in diameter; in the largest varieties, more than half an inch; green, yellow, red, purple and sometimes variegated, but the color is entirely in the outer skin, the juice being always colorless, and while the pulp of the grape is wholesome, nutritious and gently laxative, the skin is astringent and indigestible. Some of the ovules are often abortive, or even all of them in the fruit of old vines of some varieties, e. g., the seedless Ascalon or Sultane raisins. The vine attains large size, the stem being sometimes 18 inches in diameter (a vine in California is said to have a diameter of 36 inches), so that the wood, which is very hard and durable, has been used for making furniture, statues, etc. It attains very great age, continuing fruitful for at least 300 or 400 years.

The grape is one of the most valuable of fruits, not only for its use in the manufacture of wine, and as the source from which brandy, vinegar and tartaric acid are obtained, but also because, both in a fresh and dried state, it forms not a mere article of luxury, but a great part of the food of the inhabitants of some countries. Dried grapes, under the names raisins and currants, are a considerable article of commerce. Fresh grapes are commonly eaten with bread in Syria, and some other countries in which they abound. The usefulness of some varieties of the grape is increased by its ability to keep fresh for many weeks if stored in a cool airy place. The number of varieties described in works on the culture of the grape and in the catalogues of nurserymen is already among the thousands, and many new kinds, obtained from seed and by hybridization, are introduced every year. Under the name Ampelography (Gr. *ampelos*, a vine), this subject has been elevated by German writers almost to the rank of a science.

It is doubted of what country the grapevine is a native, nor is it known at what time — certainly very remote — its cultivation was first introduced into southern Europe. It is now found wild in parts of Europe, but is rather naturalized than truly native. It seems probable that it is indigenous in the hilly countries

south of the Caspian Sea, where it is very abundant and luxuriant, climbing to the tops of the loftiest trees and producing large bunches of delicious fruit.

The cultivation of the grape and the making of wine are of most remote antiquity, as appears from the Scripture history of Noah and from many passages of the most ancient authors. The mythological fable of the marches of Bacchus relates to the extension of the culture of the vine from Asia into Europe. The earliest records of the manner of cultivating the vine are by the Roman authors Virgil and Columella. The vine was introduced into southern France probably as early as into Italy; it is said to have been brought to Marseilles by the Phocæans, about B.C. 600, and its cultivation was early coextensive with civilization in all the countries near the Mediterranean. In Italy, so much of the land was occupied by vineyards that Emperor Domitian, fearing a scarcity of corn, issued a restrictive or prohibitory edict, A.D. 81, which continued long in force, through fear that the abundance of fine wine might tempt the barbarians of the north to invade the country. The vine was introduced into southern Germany about B.C. 3d century. Augustus preferred the Rhætian wine to all other. The first vineyards on the Rhine and Moselle were planted by the Emperor Probris (A.D. 281). Under the Merovingians, the culture of the vine extended greatly in France and Germany. Charlemagne derived considerable revenue from the vineyards even of the northern parts of his empire. The Huns who remained in a number of settlements on the Rhine after the expedition of Attila into Gaul in 451, brought thither from Pannonia the arts of cultivating the grape, and of making wine, and Hunnish grapes and Hunnish wine were long in high repute. In the Middle Ages, the monks were the first to plant vineyards and to make wine in many parts of Europe.

The cultivation of the vine was introduced into England by the Romans. At the time of the Norman Conquest there seem to have been vineyards in southern and southwestern England, and though they afterward disappeared, successful attempts were occasionally made to re-establish them; and one at Arundel Castle in Sussex yielded about the middle of the 18th century large quantities of wine. Of late years, the cultivation of the vine has much increased in southern England, in gardens, on the walls of suburban villas and of cottages, but chiefly for the fresh fruit, though wine of moderately good quality is made in small quantities for domestic use.

The vine is a hardy plant, so far as endurance of severe winter frosts is concerned; but it requires for the ripening of its wood, as well as of its fruit, a considerable summer heat continued for several months. A very moist climate is unsuitable to it. It produces abundant fruit in warm climates, such as India; but the juice passes too rapidly into acetous fermentation to be used for making wine.

In Europe the cultivation of the vine forms an important branch of rural economy as far north as Coblenz on the Rhine; but in some countries, particularly Greece and the Ionian Islands, raisins are the chief part of the produce of the vineyards.

The cultivation of the vine was early introduced by the Spanish and Portuguese into the Azores, the Madeira and Canary Isles and America. The first vines were carried to the Cape of Good Hope by the Dutch in 1650; but while the vines of Madeira and those of the limited district of Constantia at the Cape of Good Hope have long had high celebrity, and those of Canary and Teneriffe have been imported in considerable quantities into Europe, it is only of late that much attention has been given to the cultivation of the grape in the other parts of South Africa.

The early settlers of the northern portion of the United States found grapes growing wild, but for a long time little attention was given to their cultivation. From about 1620 in Virginia and 1683 in Pennsylvania, many efforts, which resulted in failure, were made to grow European varieties; but about 1771 the cultivation of these sorts was successfully established on the Pacific Coast. With two exceptions the American varieties now under cultivation have been originated since 1820, and as late as 1850 there were only six or eight varieties supposed suitable for general cultivation. The first marked success was with the Catawba, which came into notice about 1835, and which, though lacking in hardiness, was extensively planted. Nearly all the varieties now grown have been originated since 1860.

Besides *V. vinifera,* produced in California, the species of grapes grown in the United States are as follows: *V. labrusca,* the northern Fox grape, native of the Alleghany Mountain region and found from Canada to South Carolina — the source of more cultivated varieties than any other native species; among these are the Catawba, Concord, Hartford, Prolific and other popular sorts: the foxy flavor of the original largely disappears when varieties are brought under cultivation; *V. riparia* (with which *V. cordifolia* is often confounded), the Frost grape, from which we have the Elvira, Clinton and Taylor; *V. æstivalis,* the Summer grape, from which have come the Cynthiana, Herbemont and Norton's Virginia; *V. labrusca,* the northern Fox grape, native of the Alleghany grape and Sugar grape; *V. vulpina,* or *rotundifolia,* the southern Fox grape, from which have come the several varieties of the Scuppernong. A large number of hybrid varieties, many of great value, have been originated. Some varieties succeed over a large area and under widely differing conditions of soil and climate; but many sorts valuable in certain circumscribed localities do not thrive elsewhere. There is, however, little difficulty in finding kinds of good quality and a sufficient degree of hardiness for any portion of the United States. The following are among the most popular varieties: Black Grapes — Concord, Hartford, Prolific, Moore's Early, Wilder and Worden; Red Grapes — Agawam, Brighton, Catawba, Delaware, Salem and Vergennes; White Grapes — Diamond, Lady, Martha and Niagara; Foreign Grapes — Black Hamburg, Flaming Tokay and White Frontignan.

As seedings do not reproduce the parent variety, but often differ widely from it, they are grown only to procure new sorts or to obtain hardy stocks on which to graft the more delicate European kinds. Propagation is effected by cleft-grafting (see GRAFTAGE), layers or cuttings. Grafting is to be done just before

cold weather sets in, and at a few inches below the surface of the ground. The soil is to be pressed around the graft to its upper bud, and a small inverted flower-pot placed over it so that the scion may not be loosened when the soil, which must be piled around and upon it in sufficient quantities to prevent freezing, is removed in the spring. This method often fails, but when successful it secures vigorous growth and very early fruitage. It is valuable particularly for testing any sorts and for utilizing strong bearing vines which yield a poor quality of fruit. In Europe whip-grafting of varieties of *V. vinifera* upon roots or cuttings of American sorts — principally varieties of *Vitis riparia,* which are not liable to injury by the Phylloxera — is very extensively practised. In America large quantities of vines are grown from layers. In spring the cane from which plants are to be grown is fastened to the bottom of a trench six inches deep. A new plant soon springs from each bud. When these plants have made a growth of eight to 10 inches the trench is carefully filled with soil. In autumn the cane is cut between the shoots and the latter can be transplanted. Somewhat inferior plants can be obtained by laying down, in July, shoots of the same season's growth and covering at once with soil. The most common method of propagation of the vine is by cuttings. These are made in the fall from well-ripened wood of one season's growth, cut into pieces six to eight inches long (each having two or three buds), cut off smoothly close to the lower bud and one inch above the upper one. In the spring these cuttings are planted, three inches apart, in a trench with a sloping side, against which they are placed. The soil must be firmly packed in the lower portion of the trench, which is then to be filled more loosely as high as the upper bed of the cutting, which should be a little below the surface of the ground. After the shoots are a few inches high the trench is to be filled completely. The Delaware and a few other varieties will not grow well in this way, but can be started from cuttings only two or three inches long, each having but one bud. These cuttings are rooted in sand by the aid of artificial heat.

Though the vine will grow in a great variety of soils it thrives best in soil rather light and dry. A granite or limestone formation is desirable; and gently-sloping hillsides, especially if they face the south or southwest, are more favorable than valleys or level fields. In a wet location the land should be thoroughly underdrained. Deep plowing is essential, and subsoiling is desirable. Moderate quantities of well-rotted stable manure should be incorporated with the soil and ground bones and fertilizers rich in potash will tend to promote vigorous and healthy growth of the vines. Planting may be either in spring or in fall. For the fruit garden many growers prefer vines two years old, but where planting is on an extensive scale those one year old are considered best. The distance apart of the vines varies with the character of the variety, from six to eight feet for the small-growing sorts to 10 by 10 feet for the more vigorous kinds. At the time of planting the tops of the vines should be cut back to two or three buds, and it is often desirable to shorten the roots. Planting should be carefully done, and during the first two seasons low growing crops, as beans or potatoes, may be grown between the rows; but fertilizers must be liberally used or the other plants will retard the growth of the vines. Whether any other crop is grown or not, sufficient cultivation must be given to keep the soil mellow and prevent growth of weeds and grass. In the fall of the first year the top of the vine should be cut to a single cane with three buds. The second season this cane should be tied to a stake four feet high, the lateral shoots pinched off when about five inches long, also the end of the vine when the top of the stake is reached. The third season, a trellis upon which the vines can be trained, is requisite: this may be made of posts, reaching six feet above ground, 20 feet apart, on which are fastened four lines of galvanized wire. The fruit borne this season will be on branches from the main stem; but in later years the laterals must be cut back to three buds, after the leaves have fallen in autumn, from which will grow the new wood on which fruit will be borne the next season. Summer pruning consists in pinching back the young shoots on which fruit has started, but which are not intended for bearing canes the next year. This must not be overdone, as it is important to leave foliage enough to shade the fruit and fully to elaborate the sap. If the vine shows tendency to overbear, the fruit should be thinned when it is quite small, care being taken to remove the smallest and most imperfect clusters. Girdling the vine consists in removing from the bearing canes, near the base, a ring of bark three-sixteenths to three-eighths of an inch wide. It is done, at the north, early in July, and hastens the ripening of the fruit about 10 days. The fruit is rendered somewhat softer, and seems more liable to crack; but the size is considerably increased and the flavor is fully maintained. It is to be practised only on canes which are to be removed the next season. If the best quality is to be secured, the fruit must remain on the vine till it is fully ripe. When the fruit is gathered, the stems should be cut rather than broken. Only the varieties with thick skins can be safely sent to distant markets, and shipments ought always to be in baskets or boxes of thoroughly seasoned wood. In cold regions it is necessary to give the vine protection during the winter. Some varieties require less than others, but where the cold is severe it is well to at least lay the vines on the ground at the approach of winter. Evergreen boughs are useful for covering. Where these cannot be had, two or three inches of soil may be thrown over the tops. Gravel or sand answers better for covering than clay or other compact soils.

The principal diseases of the American vine are mildew and black-rot. The causes of mildew are supposed to be certain peculiar conditions of the atmosphere, neglect of pruning, lack of mineral elements in the soil, and lack of constitutional vigor of the plant. Dusting the affected foliage every two weeks with flowers of sulphur, when the leaves are wet, is a common remedy. To prevent black-rot the leaves may be sprayed every 10 days, during the growing season, with the Bordeaux mixture as used for preventing the potato-rot. A preventive of both mildew and black-rot, which is rapidly growing in favor, is the use of paper bags, which are put over the clusters when the

fruit is quite small, and fastened around the stems with common pins: the two-pound size is generally used. This method is useful also in preventing injury to the fruit by bees and other insects. The chief enemy of the European vine-grower is the Phylloxera (q.v.), which has caused immense losses. The remedies consist in submerging the ground with water seven or eight weeks each winter, or the application of chemical insecticides, e.g., sulphocarbonate of potassium, or bisulphide of carbon, in sufficient quantities to reach the infested roots; but these are far too costly for general use. Preventive measures are the planting in soil containing 60 per cent of sand (an expensive method which can be employed in but few localities), and the grafting of the European varieties on hardy American sorts. The principal enemy of the vine-grower in this country is the rose-bug, which often proves very destructive by eating the flowers. Hand-picking and dusting with pyrethrum powder are the leading remedies.

The juice of ripe grapes contains considerable *grape-sugar* (see SUGAR), small quantities of a glutinous, substance, and of extractive, bitartrate of potash, tartrate of lime, a little malic acid, and other ingredients, suspended or dissolved in water. The rapidity with which it passes into a state of fermentation after being expressed from the fruit is remarkable.

For the making of wine, the wine-trade, the qualities and uses of wine, the different kinds of wine, etc., see WINE and WINE-MAKING. Concerning the other commercial products of the grape, see BRANDY; VINEGAR; TARTARIC ACID; RAISIN; CURRANT.

VITORIA, vē-tō'rē-ä, Spain, an episcopal city, capital of the province of Alava, situated on a height overlooking an extensive plain watered by the Zadorra, 30 miles south of Bilbao. The old parts of the town are poorly built, but the new town is well laid out in spacious streets and squares and is electrically lighted. The principal buildings and establishments are the 12th century fortress-cathedral, three other churches, one of them adorned with a fine altar-piece by Velazquez, a handsome modern palace of deputies, an academy of music, theatre and prison. The chief manufactures are furniture, candles and articles in leather. There is a brisk trade, especially in steel and iron, grain and wine, as well as in the manufactures mentioned. It was the scene of two battles, the first fought in 1367, in which the Black Prince gained a victory for Pedro the Cruel; the second on 21 June 1813, in which the Duke of Wellington concluded his series of great Peninsular victories, defeating the French under King Joseph and Marshal Jourdan. Pop. (1918 est.) 35,000.

VITREOUS ROCKS, volcanic rocks with a glassy texture, due to rapid cooling which prevented the crystallization of the magma. They are comparable to the glassy slag of furnaces. They break with a conchoidal fracture and are dark undercrossed nicols. The chief volcanic glasses are obsidian, perlite and pitchstone (qq.v.). Pumice is a cellular variety which is represented by the frothy slag of blast furnaces.

VITRIFIED FORTS, the name given to certain prehistoric hill fortresses principally found in Scotland and formed of stones heaped together. The materials of which they are constructed are perfectly or partially vitrified or rendered glasslike by the action of heat. It is now generally believed that the vitrification was intentional, being effected by means of piled-up fuel.

VITRINGA, Campegius, eminent Dutch divine and commentator: b. at Leeuwarden, in Friesland, 16 May 1659; d. 31 March 1722. He studied at Franeker and Leyden, at which last place he received the degree D.D. in his 20th year. In 1681 he was appointed professor of Oriental languages; and two years later received the chair of theology in the University of Franeker, where he died. Vitringa is regarded as one of the most learned and laborious divines of his age, and has left many excellent and erudite works, chiefly commentaries on portions of the Scriptures, nearly all in Latin; among his works are 'Commentarius in Jesaiam'; 'Anacrisis Apocalypseos Johannis Apostoli'; 'Commentarius in Jeremian'; 'Commentarius in Zecharaiam'; 'Vetus Synagoga'; 'Dissertationes Sacræ'; 'Typus Theologicæ Phopheticæ, etc.

VITRIOL, a common name for ordinary commercial sulphuric acid and for certain salts derived from it. Ordinary concentrated sulphuric acid is more specifically known as oil of vitriol; sulphate of iron or copperas is green vitriol; sulphate of copper or blue stone is blue vitriol; sulphate of zinc, white vitriol. A dilute sweet aromatic solution of pure sulphuric acid is known in medicine as elixir of vitriol.

VITRIOL, Oil of, or **VITRIOLIC ACID,** a name once applied to sulphuric acid (q.v.).

VITRUVIUS, Pollio, Marcus, vĭ-troo'vĭ-ŭs pŏl'ĭ-ō, Roman architect and military engineer, supposed to have flourished in the time of Julius Cæsar and Augustus, but of whose parentage and place of nativity no certain knowledge is obtainable. The most probable opinion is, that he was born at Formia, a city of Campania, now called Mola di Gaeta. The Veronese, however, claim him as a fellow citizen and have erected a monument to his memory. He appears to have been liberally educated; and that he traveled for information and improvement we learn from his writings. The only public edifice which he mentions as constructed from his designs is a basilica at Fanum Fortunæ (now Fano) in Umbria. He wrote at an advanced age his work 'De Architectura Libri Decem,' dedicated to the emperor (without doubt, Augustus, although he is not named). This treatise, valuable as a compendium of those of numerous Greek architects, was first printed at Rome about 1486; and among modern editions, the most valuable are those of Schneider (1808); Stratico (1825–30); and Rose and Müller-Strübing (1867), with index by Nohl (1876). An English translation, with commentary by William Newton, appeared in 1771, republished 1791, and a new translation by W. Wilkins, with an 'Introduction, containing an Historical View of the Rise and Progress of Architecture among the Greeks,' in 1812–17. This was reprinted in Cambridge in 1914.

VITTORIA COLONNA, vē-tō'rē-ä kō-lŏn'nä. See COLONNA VITTORIA.

VITTORIO, vĭt-tō'rē-ō, Italy, a city of the province of Treviso, formed in 1879 by the incorporation of the episcopal see of CENEDA and the town of SERRAVALLE, situated at the entrance of Santa Croce Valley about 22 miles north of Treviso. The chief features are an ancient citadel and a cathedral. Mineral springs make Vittorio a favorite health resort. It has silk industries and manufactures of textiles, paper, etc. Pop. 12,500.

VITUS, Saint, a name which appears in the martyrologies as belonging to a certain Christian who suffered under Diocletian. He owed his conversion to the teaching of a pious nurse Crescentia and her husband, Modestus. His festival is set in the Roman calendar on 15 June. As a saint of succor he is invoked for protection against sudden death, and against many diseases and distempers, notably chorea, which is commonly called Saint Vitus's dance.

VIVANDIÉRE, vē-vän-dē-ār, in the French army, a girl or woman who sells provisions and liquor. The dress of the vivandières is generally a modification of that of the regiment to which they are attached.

VIVARINI, vē-vä-rē'nē, **Antonio,** styled also ANTONIO DA MURANO, Italian painter: b. Murane about 1410; d. about 1470. He painted between 1440 and 1446 with Johannes Alemannus, and their work is signed 'Joannes et Antonius de Muriano fecerunt.' After 1450 Antonio painted with his brother Bartolommeo, and an altar-piece designed by them is in the Pinacoteca at Bologna. One of Antonio's finest works is an altar-piece, dated 1446, and now in the Venetian Academy. At the Lateran in Rome is an altar-piece, the work of Antonio alone, and the Berlin Museum contains his 'Adoration of the Kings.'

VIVARINI, Bartolommeo, bär-tō-lō-mā'ō, Italian painter, brother of Antonio Vivarini: b. Murano; d. after 1499, the date of his latest picture. He painted religious pictures in tempera with a brilliancy and power equaling the effects of oils, and his 'Saint Augustine Enthroned' (in the gallery of the Academy of Venice), is a majestic figure distinguished by grandeur of conception and powerful execution. There is a 'Madonna and Child' of his in the London National Gallery, and his 'Death of the Virgin' was sold in London for $1,100 in 1886.

VIVERRIDÆ, the family of the civets (q.v.).

VIVIAN, Herbert, English author: b. England, 3 April 1865. He was graduated from Trinity College, Cambridge, in 1886, has traveled extensively, was editor of the *Whirlwind* in 1889, special correspondent of the London *Morning Post* in 1898–99, of the *Daily Express* in 1899–1900, and in 1901 revived the *Rambler*. He has published 'Servia, the Poor Man's Paradise'; 'Tunisia and Modern Barbary Pirates'; 'Abyssinia'; 'The Servian Tragedy'; 'Italy at War,' etc.

VIVIAN, Thomas Jondric, American author: b. Cornwall, England, 3 Aug. 1855. He was educated in France, came to the United States, where he engaged for a time in teaching, and since 1886 has been engaged in editorial work. His writings include 'Seven Smiles and a Few Fibs'; 'Everything about Our New Possessions'; 'Luther Strong'; translation from Catulle Mendes' 'The Fairy Spinning-wheel,' etc.

VIVIAN GREY, a novel by Benjamin Disraeli, published in 1827–28. It was his earliest essay in fiction, and despite serious faults of construction and character delineation, achieved great success, its unusual representation of the hero as a man-of-the-world no doubt having much to do with its popularity.

VIVIANI, vē'vē-ą'nē, **René,** French statesman: b. Sidi-bel-Abbes, Algeria, 8 Nov. 1863. He was an associate worker on the *Petite Republique,* becoming Socialist Deputy for Paris. In 1893 he was appointed Minister of Agriculture in the Clémenceau Cabinet. With the creation of the Ministry of Labor by M. Clémenceau, M. Viviani received the post. With the construction of the Briand Cabinet he was also a member. June 14, 1914 he was elected Prime Minister of the 57th ministry of the Republic taking the portfolio of Minister of Foreign Affairs, which (Aug. 26) he passed over to M. Théophile Delcassé.

VIVIANITE, a mineral having the composition of a hydrous phosphate of ferrous iron, $Fe_3(PO_4)_2 + 8H_2O$; sometimes called Prussian blue. It often occurs in globular masses showing stellate-foliated structure, also earthy or as an incrustation. Distinct crystals are comparatively rare. They are monoclinic prisms, usually transparent and of metallic-pearly to vitreous lustre. They exhibit strong pleochroism and green, steel-blue to indigo-blue colors. The cleavage parallel to the clino-pinacoid is highly developed. The hardness of vivianite is 1.5 to 2 and its specific gravity is about 2.63. It is often associated with pyrite, pyrrhotite or limonite and is also found in the clay beds, peat bogs and the green-sand formations. Many curious occurrences are noted in mineralogical books. The original locality in Cornwall, England, has produced many fine specimens, also Australia, Allentown and Mullica Hill, N. J.

VIVIEN DE SAINT-MARTIN, vē-vē-ăn dė săn mär-tăń, **Louis,** French geographer and author: b. Saint-Martin-de-Fontenoy, France, 17 May 1802; d. Paris, 3 Jan. 1897. He early devoted himself to geography, his first work 'Carte Electorale' appearing in 1823. He founded and conducted in 1828–30 *Bibliomappe,* a geographical journal, and subsequently was engaged for many years in various labors of translation and editing. He was one of the founders of the Paris Geographical Society, and in 1863–76 he edited the 'Année geographique,' a post which he resigned to assume direction of the 'Nouveau Dictionnaire de geographie universelle.' His works include 'Déscription de l'Asie Mineure' (2 vols., 1845); 'Etude sur la géographie grecque et latine de l'Inde' (1848–60); 'Atlas universal de géographie, moderne, ancienne, et du moyen age' (1877), etc.

VIVIPAROUS ANIMALS, those animals which bring forth their young alive; distinguished from oviparous animals, that lay eggs. Properly speaking, the name should be limited to that form of reproduction seen in Mammalia alone, in which the young during

the whole course of their development are contained within the parent body, and bear to the parent organism a definite and intimate degree of relationship. Thus in Mammalia the young animal is contained within a special cavity, the uterus or womb, and is nourished by the blood of the parent during its development, while only at birth does it pass from the body of the parent to the outer world. Viviparous is sometimes applied in botany to plants that germinate from a seed or bud while retained on the parent plant. See MANGROVE; ANATOMY, COMPARATIVE.

VIVISECTION, the dissection of an animal while alive; physiological experiments on living animals. It is practised with the view (1) of increasing physiological knowledge; (2) of confirming known facts; (3) of giving dexterity in operative surgery. Strictly, vivisection implies only "cutting," but the term is now extended to include all kinds of experiments on living animals. The practice of vivisection can be traced back almost to the earliest periods of medicine and surgery, and was in vogue in the Alexandrian school. In recent years much opposition has been excited against it, and those adverse to the practice, the so-called anti-vivisectionists, have endeavored to restrict or wholly abolish vivisection by harsh measures. It is alleged that animal experimenters practise much needless cruelty, but even apart from this, some have taken the extreme view that any experiments on living animals, with the object of advancing medical and surgical knowledge, are, on moral grounds, unjustifiable. Those who advocate vivisection point to the gains which have accrued to physiology, and also directly to the healing art, by experiments on living animals. The circulation of the blood, and the existence of the lacteals, were thus established; and nearly all our present knowledge of the functions of the nervous system has been thus obtained, and could never have been afforded by the most minute anatomical research. In consequence of the knowledge thus obtained we no longer divide a motor nerve, and thus paralyze the face, in the hope of relieving tic douloureaux, while we now see our way to a more rational mode of treating epilepsy, various obscure forms of paralysis, etc. Without vivisection we could never have clearly understood the causes of the sounds of the heart, and without the knowledge of these the stethoscope would have been useless in the diagnosis of cardiac diseases; nor should we without vivisection have known anything of the true nature of many mysterious diseases. The Hunterian treatment of aneurism by ligature, which has saved hundreds of human lives, was worked out by experiments on living animals, and so have been the improved methods of the transfusion of blood. The study of anæsthetics, which, after prolonged investigation, led to the introduction of chloroform, was unquestionably accompanied by the suffocation of many animals; but the vast amount of misery spared to humanity by the general introduction of anæsthetics into surgery and midwifery practice more than counterbalances the pain inflicted in the experiments. The discovery of the healing power of diphtheria antitoxin, whereby countless lives of infants and children suffering from this disease have been cured, is a direct outcome of animal experiments. If vivisection were abolished the manufacture of antitoxin would perforce cease. The lower animals themselves have shared in the benefit, for (to mention only one instance) the discovery of the cause of anthrax in sheep made by means of vivisection has resulted in not only saving the lives of vast numbers of these animals (an enormous economic gain), but in preventing the sufferings of sheep attacked by the disease. By experiments on living animals must be sought the solution of such questions as the best means of restoring to life persons apparently drowned; why chloroform sometimes kills, and how those suffering under apparently fatal effects can be best recovered. These and similar considerations lead the advocates of vivisection to the conclusion that experiments on living animals performed — always with care to avoid needless pain — with the object of advancing medical, surgical or toxicological knowledge, and of thereby relieving human and animal suffering, or prolonging human life, are not only justifiable, but are a matter of duty. The Vivisection Act of 1876 regulates and restricts to a certain degree the practice of vivisection in England.

The literature on the subject is extensive. Consult 'Vivisection,' 500 prize essays (Boston 1898); pamphlets issued by the Research Bureau of the American Medical Association (Chicago 1909–13); 'Reports' of the American Humane Association (Chicago 1895–99); 'Reports' of the Royal Commission (London 1907–12); Keen, W. W., 'Animal Experimentation and Medical Progress' (Boston 1914), the best work on the subject. The American anti-vivisectionists publish the *Journal of Zoöphily* (Philadelphia), the *Open Door* (New York) and the *National Humane Review* (Albany).

VIZAGAPATAM, vē-zā"gä-pą-tām', India, a town, capital of a district of the same name, in the Madras Presidency, on the Bengal coast, about 180 miles northeast of Masulipatam. It is a military station and has a good harbor, a modern water supply, sanitary system, hemp manufactures, and an export trade in rice and sugar. Pop. about 50,000.

VIZCAINO, vēth-kä-ē'nō, Sebastian, Spanish navigator: b. Huelva, about 1550; d. Acapulco, Mexico, about 1615. After being prominent in Mexico he headed exploring expeditions from Acapulco to Lower California, 1596–97, and in 1602–03 along the California coast to latitude 43°, discovering the bay which he called Monterey, and sent a vessel which appears to have reached the mouth of the Columbia. He also sailed to Manila and Japan, 1611–14, carrying Franciscan missionaries to Japan, and was the earliest to attempt to establish commercial relations between Spain and Japan. His reports of his voyages to California were printed in Torquemada's 'Monarquia Indiana' (1615), and the greater share of his narratives, including that of his voyage to Manila, was included in De Navarrete's 'Coleccion de Viajes y Descubrimientos' (1625–29).

VIZETELLY, viz-ē-tĕl'ĭ, Edward Henry ("BERTIE CLARE"), English journalist and war correspondent, son of H. R. Vizetelly (q.v.):

b. Chiswick, England, 1 Jan. 1847; d. London, 13 April 1903. He was educated at the Imperial Lyceum, Saint Omer, France. At the outbreak of the Franco-Prussian War he became special correspondent for the New York *Times* and the London *Daily News*, served as orderly officer on the staff of Garibaldi, and was present at Dijon and at Langres; subsequently he engaged in the Kabyle insurrection of 1871, served in the Russo-Turkish War of 1877–78 and in the Greek insurrection of the latter year. He founded the Cyprus *Times* in 1881 and the *Times of Egypt* at Alexandria in 1882. At the bombardment of Alexandria on 11–12 July 1882 he was the only Englishman in the city, and during the firing sent half-hourly dispatches to London. In 1888 he commanded the New York *Herald* relief expedition sent in search of Stanley in Africa, and met him in East Africa in 1889. He was the author of 'Reminiscences of Bashi Bazouk'; 'From Cyprus to Zanzibar'; 'The Warrior Woman.' His son Henry Edward is a member of the First Central Ontario regiment on active service in France (1918).

VIZETELLY, Ernest Alfred, English author, translator and war correspondent; Chevalier of the Legion of Honor; French medal of the War of 1870–71: b. 29 Nov. 1853; son of H. R. Vizetelly. He was educated at Lycée impérial Bonaparte, now Condorcet, Paris. During the Franco-German War (1870) he became a newspaper correspondent (youngest on record) and artist for *Daily News, Pall Mall Gazette,* and *Illustrated London News;* was in Paris during part of the German siege; passed out, joined the Army of the Loire, attached to Staff of Third Division 21st Army corps; was in Paris throughout the Commune; continued acting in a journalistic capacity on the Continent until about 1886 he became an editor and reader to Vizetelly and Company, publishers. After the liquidation of that business, consequent upon a prosecution for publishing translations of some of Zola's novels, Mr. Vizetelly reverted to journalism; but in later years prepared or edited English versions of most of Zola's works, besides producing 'The Heptameron' (English Bibliophilists' edition, 5 vols., 1894); 'The True Story of the Chevalier d'Eon' (1895); 'With Zola in England' (1899); 'Bluebeard, Comorre the Cursed and Gilles de Rais' (1902); 'Emile Zola, Novelist and Reformer' (1904); 'The Anarchists, their Creed and Record' (1911); also 'The Scorpion, a romance of Spain' (1894); 'A Path of Thorns, a story of French Life' (1901); 'The Lover's Progress' (1902); 'Le Petit Homme Rouge: The Court of the Tuileries' (1907); 'The Favourites of Henry of Navarre' (1910); 'The Favourites of Louis XIV' (1912); 'Republican France (1870–1912)' (1912); 'My Days of Adventure' (1914); 'My Adventures in the Commune of Paris' (1914); 'In Seven Lands' (1916).

VIZETELLY, Frank (Francis) Horace, American lexicographer, author, editor, encyclopedist; b. Kensington, London, 2 April 1864, educated in schools of the Christian Brothers, Saint Servan, Normandy (1870); Lycée Baudard (*élève couronné*), Nogent-sur-Marne, France (1871–75), and Arnold College, Eastbourne, England (1876–80), Litt.D., Oriental University, Washington, D. C.; LL.D., Saint John's College of the University of Maryland. In the fall of 1882 entered the firm of Vizetelly and Company, publishers, where he served as apprentice under George W. Redway. On the withdrawal of Redway (1883), he assumed management of the wholesale and export department — a position he held until February 1891. From 1880 to 1890 he contributed articles on cycling to *The Cyclist,* Coventry, and *Wheeling,* London. In 1901 he investigated the conditions prevailing in the detention camps of the Boer prisoners of war, at Bermuda, the only civilian accorded that privilege by the British authorities, and published his report in the leading American and English newspapers. Owing to the prosecution of his father, and the heavy losses entailed thereby, he left the business in the hands of his elder half-brother, Arthur (died April 1916), and sailed for New York City, 22 Feb. 1891. He joined the editorial staff of the Funk and Wagnalls Company 6 April 1891; assistant editor of the 'Standard Dictionary' (1891–95); associate editor of same, new edition, 1903; managing editor, 1905; managing editor Funk and Wagnall's 'New Standard Dictionary' (1908–13); general editor, 1913–; associate editor of the *Home and Country Magazine,* 1893–94; one of the editors of Hoyt's 'Cyclopedia of Practical Quotations' (1895); one of the editors of Merck's 1896 'Index of Chemicals and Drugs' (1895); associate editor of the 'Standard Dictionary' abridgments, student edition, 1897; Comprehensive, 1898; Concise, 1901, and Vest Pocket, 1906, and supervising editor of the new editions, 1913–18; office editor of more than 100 miscellaneous publications on English public speaking, medicine, history, social reform, travel, etc.; managing editor 'Columbian Encyclopedia' (40 vols., 1898); revising editor of the 'Cyclopedia of Classified Dates' (1899); contributor to 'Appleton's Annual Encyclopedias'; 'The New International Encyclopedia' (1905); secretary of editorial board and manager editorial department of the 'Jewish Encyclopedia' (12 vols., 1901–05); editor of "The Lexicographer's Easy Chair" (*The Literary Digest*), 1904–09, 1912–, and editor-in-chief of the Standard Reference Bureau, 1913–; also of departments of pronunciation and typography on the 'New Schaff-Herzog Encyclopedia of Religious Knowledge' (12 vols., 1905–11); editor of Department of Pronunciation of 'Standard Bible Dictionary' (1908–09). Elected Fellow of the Royal Society of Arts, London, 1903; and various other societies. Publications: 'The Preparation of Manuscripts for a Printer'; 'A Desk Book of Errors in English'; 'The Development of the Dictionary of the English Language'; 'Essentials of English Speech and Literature'; 'A Desk Book of 25,000 Words Frequently Mispronounced'; 'A Dictionary of Simplified Spelling'; 'The Soldier's Service Dictionary'; 'A Desk Book of Satire, Sarcasm, Cynicism and Irony'; 'English Idioms and Idiotisms'; 'A Desk Book of Prefixes, Suffixes, Bases and Stems,' and many miscellaneous articles and reviews to the periodical press.

VIZETELLY, Henry Richard, English newspaper proprietor, editor, publisher and

writer: b. London, 30 July 1820; d. Tilford, near Farnham, England, 1 Jan. 1894. He came of a family of printers and stationers, was educated at Clapham and at Chislehurst and was later apprenticed to a wood-engraver, an art in which he became proficient, his most notable work as an engraver being a series of illustrations drawn by Birket Foster for Longfellow's 'Evangeline.' He took a prominent part in founding *The Illustrated London News* in 1842, and was one of the founders of the *Pictorial Times* in 1843, a pioneer enterprise in illustrated journalism; published the first English edition of 'Uncle Tom's Cabin' in 1853; established the *Illustrated Times* in 1855; the *Welcome Guest* in 1858; and in 1865–76 was correspondent of the *Illustrated London News* at Paris and at Berlin. He was appointed representative of the British government on wines at the Vienna Exposition in 1873 and at Paris in 1878, and for his labors at the former was created by the Austrian emperor chevalier of the Order of Franz-Joseph of Austria. In 1880, with the aid of his sons Arthur (1881) and Frank (1882), he established a publishing house in London and engaged in issuing translations of the works of foreign authors, chiefly Russian and French, and in 1884 began to publish translations of the works of Emile Zola. The literal translations of the works of the novels of the French realist, however, aroused a storm of protest, and in 1888 he was indicted on the charge of publishing obscene libels, and, on the advice of counsel, pleaded guilty and agreed to withdraw the edition of Zola's works. Thereupon he was fined £100 ($500) and required to enter into his own recognizances to be of good behavior for a period of six months. In 1889, in harmony with his understanding of the undertaking given, he decided to issue an expurgated edition of the works of Zola. Notwithstanding the deletion of all the passages to which objection had been raised, he was indicted a second time, and, being then 71 and broken in health, he, following advice of counsel, again pleaded guilty, and was sentenced to three months' imprisonment as a first-class misdemeanant. He occupied the time of his detention in writing his reminiscences to the year 1870. His writings include a series of monographs on wines, entitled 'Wines of the World' (1875); 'Facts about Sherry' (1876); 'Facts about Champagne' (1879); 'Facts about Port and Madeira' (1880); 'The Story of the Diamond Necklace' (2 vols., 1867); 'Berlin under the New Empire' (2 vols., 1879); 'Paris in Peril' (3 vols., 1882); and two volumes of literary reminiscences; 'Glances Back through Seventy Years' (1893), etc.

VIZIER, vĭ-zēr', a title given to high political officers in the Turkish Empire and other Mohammedan states. In Turkey, the title is given to the heads of the various ministerial departments into which the Divan or Ministerial Council is divided. The president of the Divan or Prime Minister is known as Grand Vizier.

VLADIKAVKAZ, vlă-dē-kăv-kăz', Russia, a fortified town in Caucasia, capital of Terek district, situated on an elevated plane at the northern base of the Caucasus, about 90 miles north of Tiflis, with which it is connected by a military road through the Dariel gorge. It is connected by rail with Rostov and with Petrovsk on the Caspian, and is rapidly developing as a commercial centre. Pop. about 79,343.

VLADIMIR I, vlă'dĭ-mĭr or vlă-dē'mĭr, **Saint,** "the Great," Russian emperor, son of the Grand Duke Sviatoplav: d. Beresyx, Russia, 15 July 1015. He received from his father in 972 the government of Novgorod, notwithstanding his illegitimacy, and the remainder of the empire was divided between the lawful heirs, Jaropalk and Oleg. Jaropalk killed Oleg in a quarrel in 977, and Vladimir escaped a similar fate only by flight. In 980, Vladimir returned with an army, overthrew and caused the assassination of Jaropalk and became sole ruler of the empire. He then extended his boundaries from the Black Sea to the Baltic, and founded his capital at Kiev. While besieging the Christian city of Cherson in the Crimea he decided to demand the hand of Anna Romanovna, sister of Constantine IX, the Byzantine emperor, in return for a cessation of hostilities. The demand was granted, and by this princess, Vladimir was converted to Christianity. The Greek Church was established in Russia and Vladimir's subjects willingly embraced the new faith. The character of the emperor seems completely to have changed after his conversion. He built churches and monasteries, abolished capital punishment, and in his private life substituted chastity for the former licentiousness. He divided his empire among his 12 sons, and after his death was canonized in the Greek Church, and in 1782 the "Vladimir Order" was founded by Catharine II. Consult Karamzin, 'History of Russia' (1816).

VLADIMIR II, Monomachus, Russian emperor, great-grandson of Vladimir I: b. 1052; d. Kiev, Russia, 19 May 1126. Contrary to the Slavonic law, he succeeded to the throne in 1113. He possessed both valor and ability, and under his wise rule, Russia enjoyed a period of great prosperity. He married Gida, daughter of Harold of England, and the famous Valdemar of Denmark was his grandson. He wrote a "Testament," which is valuable as a picture of the manners and opinions of the day. Consult Rambeau, 'History of Russia' (1886).

VLADIMIR, Russia, (1) a town, capital of the government of same name, on a lofty and wooded bank above the Klyazma, 105 miles northeast of Moscow. It is one of the oldest towns in Russia; and has a 12th century cathedral, a theological seminary, considerable manufactures and a trade in fruit, particularly cherries. From 1157 to 1328 it was the residence of the Russian grand princes. It was twice sacked in 1238 and 1410 by the Tatars. Pop. about 43,522. (2) The government has an area of 18,864 square miles. It has an undulating surface with a general slope toward the east, and is not very fertile. The drainage is all carried to the Volga by the Oka and its tributary, the Klyazma. The province is rich in archæological remains of the Palæolithic and subsequent ages. There are important manufactures of linens and woolens and several blast-furnaces. Before the war the production of textiles was about $125,000,000 annually. Pop. about 2,225,900.

VLADIVOSTOK, vlä-dē-vŏs-tŏk', Asiatic Russia, a fortified seaport town of eastern Siberia, on the harbor of the Golden Horn in the Gulf of Peter the Great, Japan Sea. It was founded in 1861, and is an important naval station of Russia, and the eastern terminus of the Trans-Siberian Railway, the first sod of which was cut at Vladivostok, 24 May 1891, the line being opened in December 1901. The harbor is surrounded by hills which are well fortified. It has large dry docks, waterworks, electric street railways and street lighting plants, two large shipbuilding yards and 60 new mechanical shops. Vladivostok is an open port and has lines of steamers running to Japanese and Korean ports, and a line opened in 1900 to Seattle, Wash. Ice-breaking steamers keep the harbor open in the winter months. A Japanese squadron bombarded Vladivostok early during the Russo-Japanese war of 1904, but without inflicting any serious damage. During the World War the supplies sent from the United States for the Russian armies were mostly landed at Vladivostok. Pop. about 91,464, including soldiers and numerous Chinese, Japanese and Koreans. See TRANS-SIBERIAN RAILWAY.

VOCATIONAL EDUCATION. Vocational education is that education whose chief aim is to fit for productive capacity. That vocational education which is specialized to the preparation of lawyers, physicians and teachers is called professional; that which is designated to train the bookkeeper, clerk, stenographer or commercial traveler, including business leadership, is called commercial; that which is organized with reference to the needs of the bricklayer, the machinist, the shoemaker, the metal worker, the factory hand and higher manufacturing pursuits is called industrial; that which conveys skill and knowledge looking to the tillage of the soil and the management of domestic animals is called agricultural; and that which teaches the girl dressmaking, cooking and the management of the home is called education in the household arts or homemaking.

The term vocational education has come to be applied somewhat loosely to cover the field of industrial, agricultural and homemaking education; particularly has it come to mean industrial education of less than college grade for boys and girls, and other persons, over 14 years of age.

The early American colonists appreciated the importance of industrial training for children and in some cases provided for it by law. A Massachusetts law of 1642 provided for the putting forth by the towns as "apprentices the children of such as shall not be able and fit to employ and bring them up . . . and they are to take care that such as are set to keep cattle be set to some other employment withal, as spinning up on the rock, knitting, weaving, tape, etc. They are also to provide that sufficient quantity of materials, as hemp, flax, etc., may be raised in their several towns, and tools and implements provided for working out the same." Virginia in 1646 advanced an elaborate plan for industrial education for poor children who were to be sent up to James City to be employed in the public flaxhouses under such master and mistresses as shall be appointed in carding, knitting and spinning. These and other laws seem to be reproductions of antecedent English laws of the same nature.

Between 1824, when the House of Refuge for delinquent boys was established in New York City, and 1875 American reformatories for juvenile delinquents provided industrial work which, while at first not of an educative character, gradually became so by the substitution of the domestic industries of the institution, farming, gardening, carpentering, blacksmithing, plumbing, painting, bricklaying, furniture making and printing for the contract work originally provided. For many years the reformatories for juvenile delinquents were almost the only institutions providing trade training for pupils 14 years of age and over.

The modern system of industrial education may be traced in part for its origin to the manual training movement. Calvin M. Woodward and John Daniel Runkle were closely connected with the beginning and growth of manual training in America. Woodward who was a professor of applied science and mathematics at Washington University, Saint Louis, and Runkle who was a professor of mathematics at Massachusetts Institute of Technology, saw the exhibit of the Imperial School of Moscow, Russia, at the Centennial Exhibition in 1876 and became interested in the form of manual training developed by Victor Della Vos. The idea of Della Vos was that of pure manual training, not to make a product but to train a worker in certain tool processes. Woodward founded the first manual training school in America in Saint Louis in 1880.

Between 1890 and 1905 manual training was introduced into approximately 200 cities of over 8,000 population. About 1905 there began a strong tendency to criticize manual training. This criticism assumes two forms: (1) that manual training courses as phases of general education should have more real educative value than the formal schemes of exercises that have prevailed in the past; (2) a demand for the substitution of actual special trade training for those intending to become industrial workers. Manual training in consequence giving place to (1) industrial arts courses in the grade schools and higher schools, and (2) trade preparatory courses in industrial schools.

Little or no attention was given by the public school systems to industrial education up to 1900. The first work was undertaken by private enterprises and philanthropy about 1850 in the direction of special industrial education when Cooper Union and the Mechanics Institute of Philadelphia, the Ohio Mechanics' Institute of Cincinnati and the Virginia Mechanics' Institute began to offer instruction at night in drawing, mathematics and science for the benefit of those employed in industrial occupations during the day time. The first forms of industrial education in America open to the general public, but under private supervision and control, thus were supplemental or related courses. Later on shop was offered on a trade extension basis.

The private trade school for boys over 16 years of age represents the first attempt to deal with the problem of industrial training in day school. In 1881 the New York Trade School offered four-month courses in the building

trades to young men between the ages of 17 and 24. During the next 20 years a few such schools were founded, such as the Williamson Free School of Mechanical Trades, near Philadelphia, the Baron de Hirsch Trade School of New York City and the Milwaukee School of Trades, all under private control.

The report of the Massachusetts Commission on Industrial and Technical Education issued in 1906 pointed out that large numbers of boys and girls were leaving school at the age of 14 and before graduation from the elementary school, and that such children made little economic progress during the two or three years following. The first trade preparatory schools for children from 14 to 16 years of age were founded in Rochester, N. Y., and Albany, N. Y., in 1908 and 1909. Many of these trade preparatory schools have been organized in New York, Massachusetts, Connecticut and other States. Special State aid for this type of education was furnished by several States, including New York, Massachusetts, New Jersey, Pennsylvania, Indiana, Wisconsin and Connecticut.

As a resultant of a long campaign on the part of the National Society for the Promotion of Industrial Education, now called the National Society for Vocational Education, a Federal act called the Smith-Hughes Act was in February 1917 passed by Congress and approved by President Wilson. This act provides for the promotion of vocational education in agriculture, the trades and industries and homemaking; it also provides for the encouragement of teacher training courses for the preparation of teachers of those subjects. The act provides for extensive annual appropriations to aid the States in this work under a co-operative plan.

The terms of the Smith-Hughes Act will determine the course of vocational education in the United States for many years. Under this act the Federal government does not propose to undertake organization and immediate direction of vocational training in the States, but does agree to make from year to year substantial contribution to its support. It undertakes also to pay over to the States annually certain sums of money, and to co-operate in fostering and promoting vocational training and the training of vocational teachers.

The Federal government bases its reasons for co-operation with the States upon four fundamental ideas: (1) that vocational education being essential to the national welfare it is a function of the national government to stimulate the States to undertake this new and needed form of service; (2) that Federal funds are necessary in order to equalize the burden of carrying on the work among the States; (3) that since the Federal government is vitally interested in the success of vocational education, it should purchase a degree of participation in this work; and (4) that only by creating such a relationship between the central and local governments can proper standards of educational efficiency be set up.

The terms of the Smith-Hughes Act are administered by the Federal Board of Vocational Education, Washington, D. C. This board is also charged with the important duty of the vocational rehabilitation of injured soldiers and sailors who served in the World War. Every State in the Union has accepted the provisions of the Smith-Hughes Act.

There are four types of trade or industrial schools or classes recognized by the Smith-Hughes Law: (1) Evening industrial; (2) part-time or continuation; (3) unit trade preparatory schools; and (4) general industrial schools in cities under 25,000. The evening industrial schools give instruction supplemental to the day employment of persons 16 years of age or over who have entered upon a particular trade or industrial pursuit. These schools are important and popular everywhere. The unit trade preparatory schools provide trade instruction to children 14 years of age and over preparatory to entrance to a specific trade or industrial occupation. The general industrial school in cities of 25,000 and under provides instruction in closely allied industry groups, as the metal trades, the building trades, the printing trades for the preparation of those who wish to prepare themselves for useful employment; these schools will be as near like the trade preparatory schools as it is possible to have in the small community. The various part-time classes will furnish appropriate instruction to children over 14 years of age who have entered upon employment. This instruction may be trade extension, or supplementary, or general education, and must be given during regular working hours, 8 A.M., and 5 P.M., and for not less than 144 hours per year. A large number of States have compulsory continuation school laws, including Wisconsin, Pennsylvania, New York, New Jersey.

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VOCATIONAL GUIDANCE. Vocational guidance is interpreted as the effort of teachers, or others entrusted with work connected with teaching, to study the aptitudes and capacities of young people in school or college, or elsewhere, with a view to placing them in the trades or professions for which they seem best adapted. Those who do this work are not necessarily teachers of these trades or professions, but they must be familiar with the general character of them and the opportunities which they offer. They must also be in close touch with those who are doing the actual teaching, or giving the vocational training, which is of course to be distinguished from vocational guidance.

The importance of guiding youth wisely in the selection of a career has been recognized in all ages, but as an organized system, worked in connection with schools, it is of comparatively recent growth. The Germans may, perhaps, be said to have begun systematic work with it. The horizontal stratification of society over there, where following in the footsteps of one's father is the usual thing, made the task simpler than in the United States where there is a vertical stratification, and the ideal of all is to rise to the top. In the struggle to get up which ensues the usual idea is to get away from the trammels of ancestral tradition, and to try to find success in far different fields. Under such a system where every youth is given a free choice and where the ideal of a Lincoln, or an Edison, or a Carnegie, is constantly held

up as a possibility, it is but natural that thousands should enter the struggle to rise higher, and that but few would succeed. Young people try to enter trades and professions for which they are ill-adapted and have no capacity, or which are already crowded by competition. The result is that by way of contrast, Germany, by guiding, if not virtually dictating, the trades and the walk of life into which the youth should go, presents cases of fewer misfits, less wreckage and a larger number of skilled workmen. In spite of the fact that the opponents of the German system point out that it is essentially undemocratic, that it cramps freedom of choice and opportunity, and is a contributing factor to the deadening grind which seemingly leads to a greater number of suicides among young people, this is felt to be a lesser evil than the lack of skilled workmen and the frightful number of failures which result from the free-for-all policy of America which permits so many thousands to enter trades and professions for which they are not fitted.

As early as 1881, Lysander S. Richards published a book on guidance entitled 'Vocophy.' After a lapse of some time the subject was again taken up, and with increasing vigor, during the first two decades of the 20th century. A bureau for vocational guidance was established in Boston in 1908. In other places similar efforts were made by teachers and others, particularly in the schools.

Closely following the vocational guidance movement came one paralleling it and calling for vocational teaching and training, so that the two have worked hand in hand. School boards, special committees in colleges, business and indrustrial firms and organizations, clubs and religious associations gave the subject their attention. Legislatures of many States appropriated considerable sums for its promotion.

Advocates of vocational guidance maintain that it should begin in the lowest school and continue through college, and even into the business and professional world. The teacher should seek to find out the aptitudes and capacities of pupils and develop them to the end that the best along such lines in a pupil should be developed. The student should be guided in an intelligent choice of elective studies. As the pupil progresses the work of guidance should go into the hands of a counsellor or group of counsellors who make a business of guiding students and of studying the qualities required by and the opportunities in the various trades and professions.

The work of the professional counsellors does not end there. They follow up the work of the student when placed to see that the proper progress is made and if any possible errors in placement have been made. Not less important, perhaps, is their obligation to study the actual surroundings into which the young workers are called upon to go. If they are found to be bad, the counsellor works in co-operation with the employer for improvement. A further part of the co-operation is to try to guide to the employer the kind of worker that is needed and to keep such worker in the continuation classes in school or college, which will improve his knowledge and skill.

The colleges have been less quick to take up with vocational guidance than the schools and outside agencies. There has been a tendency on their part to let the student "find himself" by himself, but this has not been true of all of our higher institutions.

The difficulties encountered in vocational guidance in America have arisen from the ambition of the student, and of his parent, sometimes one and sometimes both, to prepare for a trade or profession for which he is obviously unfitted. Even the foreigners, who come to this country and are accustomed to the idea of careful guidance, feel a resentment against any restriction on perfect freedom of choice, regardless of what may be said of their aptitudes and capacities. A truth often expressed is that they came to America to get free from the very restrictions which the advocates of vocational guidance would place upon them. They would rather have a chance at the highest and fail than never have had any chance at all. They do not care for the wreckage of too ambitously chosen careers and even less for the effect of such on our industrial community. The hope springs eternal in their breasts that they will succeed where others failed.

In addition to the above the most serious problems before the counsellor in vocational guidance to-day are: (1) to devise the most accurate system possible for estimating the aptitudes and capacities of those to be guided; (2) to avoid that kind of vocational guidance, which, because of the financial and social position of the youth, would place him in a horizontal stratification, such as is common in European countries, and deny to him the opportunity which democracy offers of rising to the top.

Bibliography.— Brewer, 'The Vocational Guidance Movement' (1918); Sullivan, 'A Bibliography Concerning Vocations' (1916). In the above two practically all of the important books on the subject will be found listed.

JAMES SULLIVAN,
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VODKA, a Russian intoxicating liquor, distilled from potatoes, rye and occasionally other sources; much used by the peasants. Early in the World War its use was prohibited by the tsar. This cut off the government revenue, which was considerable. During the chaos that followed, vodka was manufactured in an irregular way almost as fully as before the war.

VOGDES, Israel, American soldier: b. Williston, Pa., 4 Aug. 1816; d. New York, 7 Dec. 1889. He was graduated at West Point and served in Florida against the Seminole Indians in 1849–56. He was captured by the Confederates 9 Oct. 1861 while repelling their attack on Santa Rosa Island, Fla.; released in August 1862; and as brigadier-general of volunteers commanded Folly Island, S. C., in April-July 1863. He was promoted colonel, United States army, 1 Aug. 1864; commanded the defenses at Portsmouth and Norfolk in 1864–65; was brevetted brigadier-general, United States army, in April of the year last named; and was retired at his own request in January 1881.

VOGEL, fō'gĕl, **Eduard,** German explorer: b. Crefeld, Prussia, 7 March 1829; d. Wara, Wadai, about 8 Feb. 1856. He was educated at Leipzig and at Berlin, making a special study of astronomy and natural science. In 1851-53

he assisted Hind at Bishop's Observatory in London, and in the latter year was selected by the English government to conduct an expedition to join that of Clapperton, Barth and Overweg in central Africa. He sailed from England, 20 Feb. 1853, and on 13 Jan. 1854 reached Kuka, the capital of Bornu. From this point he made several expeditions into the surrounding country, and on 1 Dec. 1854 met Barth near Zinder. He penetrated south to Yacobi and the Benue, and on 1 Dec. 1855 returned to Kuka. From this time his notes of his explorations cease, but subsequent information discloses that he set out to the east on 1 Jan. 1856, reached Wara in Wadai, and was there assassinated. For his notes consult 'Erinnerungen an einen Verschollenen,' by his sister, Elise Polko (1863); also Pahde, 'Der Afrikaforscher Eduard Vogel' (1889).

VOGEL, Hermann Wilhelm, German photochemist and spectrum-analyst: b. Dobrilugk, Lower Lusatia, Prussia, 26 March 1834; d. Berlin, 17 Dec. 1898. He studied at the Royal Industrial Institute of Berlin, in 1860–65 was an assistant in the mineralogical museum of the University of Berlin, and from 1884 was director of the photo-technical laboratory of the Technical Institute there. He twice visited the United States (1870, 1883). His studies were directed in particular to the processes of photo-chemistry, the absorption-spectrum and the spectra of oxygen, nitrogen and hydrogen. His silver-tester, photometer for pigment-printing and heliotype-printing, and universal spectroscope were introduced into general use. Among his writings was a 'Handbuch der Photographie,' of which numerous editions appeared. His 'Das Photographische Pigmentverfahren' was also frequently reprinted.

VOGEL, Sir Julius, Australasian statesman: b. London, 24 Feb. 1835; d. near there, 12 March 1899. He was educated at the London University College School and at the Royal School of Mines, and in 1851, attracted by the discoveries of gold in Australia, went to Melbourne. He engaged in journalism, and in 1861 established in Otago, New Zealand, the *Daily Times,* the first and still the leading morning newspaper in that colony. In 1863 he entered the New Zealand House of Representatives and in 1869 he was appointed colonial treasurer, and subsequently was postmaster-general, commissioner of customs and prime minister. He resigned the latter office in 1876 and was agent-general for New Zealand in London in 1876–81. In 1884 he re-entered New Zealand politics, was elected to Parliament and again appointed treasurer, but in 1888 resigned and returned to England. He was afterward engaged under the New Zealand government in London until his death. He greatly furthered immigration to New Zealand, was instrumental in building railways, was active in bringing about the Australian federation, and secured the passage of a law for inscribing colonial stocks. He was knighted in 1875. His writings include 'Great Britain and Her Colonies' (1865); 'Official Handbook of New Zealand' (1875); 'A. D. 2000,' a novel, etc.

VOGEL VON FALCKENSTEIN, fō'gĕl fŏn fāl'kĕn-shtīn, **Eduard,** German army officer: b. Breslau, 1797; d. 1885. After a preliminary education he entered the military service in 1813 and in the following year won distinction at the battle of Montmirail. For the next 40 years little was heard of him as he advanced from grade to grade, becoming lieutenant-general in 1858, in which year also he was placed in command of the Fifth Army corps. In the war with Denmark, in 1864, he served as chief of staff and in the war with Austria, two years later, he was given an army to suppress the Hanoverians, Bavarians, Hessians and other allies of Austria among the small German states. He defeated the troops of these states in succession at Langensalza, Kissingen and Frankfort. Soon after peace was declared he was given command of the First corps. He was a member of the North German Reichstag in 1867–70 and in the latter year was in command of troops on the Baltic front. He retired three years later. Consult Wengen, 'General Vogel von Falckenstein und der hannoversche Feldzug, 1866' (Gotha 1886).

VOGELWEIDE, fō'gĕl-vī-dē, **Walter von der.** See Walter von der Vogelweide.

VOGHERA, Italy, city, province of Pavia, on a fertile elevated plain, in a district rich in vineyards, orchards and cornfields, 24 miles east-northeast of Alessandria by railway. The Via Emilia passes through the town and divides it into two parts. There are several handsome squares, of which that of the Duomo is the chief; the streets are adorned with porticoes and there is an old castle, built by Galeazzo Visconti 1372. Silks, linens, canvas and leather are manufactured. Pop. 14,651.

VOGLER, fō'glĕr, **Georg Joseph,** German musician and composer, known as the "Abbé Vogler": b. Würzburg, 15 June 1749; d. Darmstadt, 6 May 1814. He studied at Bamberg, Mannheim, Bologna and Padua; was ordained priest at Rome 1773; and made Knight of the Golden Spur and prothonotary apostolic and chamberlain to the Pope. Returning to Mannheim in 1775 he established there his first school of music. From 1786 to 1799 he was nominally resident at Stockholm, where he conducted another Tonschule; but he was constantly touring Europe as a performer on the organ. In 1807 he settled at Darmstadt as kapellmeister, and there conducted his most successful school, at times giving concerts in German cities. Vogler made a great stir in his time as theorist and organist, not being excelled on the instrument. He attempted revolutions in organ-building. He is known as the subject of Browning's 'Abt Vogler.'

VOGT, fōkt, **Karl,** Swiss naturalist: b. Giessen, Germany, 5 July 1817; d. Geneva, Switzerland, 5 May 1895. He was graduated from the University of Bern in 1833 and was associated with Agassiz in the preparation of 'L'Histoire naturelle des poissons d'eau douce de l'Europe centrale' in 1839. He was appointed professor at Giessen in 1847, where his political opinions soon caused his dismissal, but in 1852 he was chosen to the chair of geology at Geneva, which position he occupied until his death. He led an expedition to the North Cape in 1861 and in 1878 was elected a member of the Swiss National Assembly. He was an advocate of Darwinism and a strict materialist. His works include 'Physiologische

Briefe' (1845–56); 'Ocean und Mittelmeer' (1848); 'Die Säugethiere in Wort und Bild' (1883), etc.

VOGÜÉ, vō-gü-ā, **Charles Jean Melchior,** MARQUIS DE, French archæologist: b. Paris, 18 Oct. 1829; d. 1914. He was a student of Oriental religion, languages and art, traveled in Syria and Palestine in 1853–54 and 1861–62, was Ambassador at Constantinople in 1871–75, and from then until 1879 occupied that office at Vienna. He became commander of the Grand Legion of Honor in 1879, was elected to the French Academy in 1901 and was president of the Agricultural Society of France. His publications include 'Les Eglises de la Terre-Sainte' (1859); 'L'architecture civile et religieuse dans la Syrie Centrale' (1865–77); 'Inscriptions Sémitiques' (1869–77); 'Mémoires de Villars' (1889); 'Le Duc de Burgoyne et le Duc de Beauvilliers' (1900); 'Le Maitre de la Mer' (1904); 'Une Famille Vivaroise' (1912), etc.

VOGÜÉ, Eugène Marie Melchior, VICOMTE DE, French critic and historian, cousin of C. J. M. Vogüé: b. Nice, France, 25 Feb. 1848; d. 1910. He was educated at Paris, served in the Franco-Prussian war, entered the government service in the Department of Foreign Affairs in 1871, was attaché at Constantinople in 1873, secretary of the legation at Saint Petersburg in 1876, and in 1882 resigned to enter upon a literary career. He was elected to the Academy in 1888 and in 1893–98 was député de l'Ardéche. His publications include 'Syrie, Palestine, Mont Athos' (1876); 'Les portraits du siècle' (1883); 'Le Roman russe' (1886); 'Cœurs russes' (1894); 'Jean d'Agrène' (1898); 'Le rappel des ombres' (1900); 'Trois Drames l'Histoire de Russie' (1911), etc.

VOICE, the Human, the sound that proceeds from the mouth when the air is driven through the windpipe, as modified by the vibrations of the vocal cords. These cords are ligaments in the larynx, attached to the hyoid bone. It is not speech (q.v.), that word describing the formation of arbitrary combinations of sounds to express ideas. The voice is simply used in speech, but it may also be used in yelling or other inarticulate noises. When the voice is reduced to a mere breath, it is called a whisper. Most dumb men have voices, but like animals they cannot form words or use intelligent speech. Domestic animals all understand more or less speech, and usually will obey commands, yet they cannot talk. However, the voice of the dog and cat are familiar in every locality, but they do not speak nor sing. The register or scale of the human voice is about two and a half octaves on the average, or nearly six octaves in the extremes of bass and soprano, and this permits its use in singing. See VOICE AND VOICE CULTURE.

Loudness of the voice is dependent upon the force and intensity of the blast of air coming through the glottis, assisted by free movement of the vocal cords. The pitch of the voice depends on the rapidity of the vibrations, this being accomplished by the tension of the cords, altering their length, thickness and elasticity. Modulation of the voice is accomplished through the action of the lips, tongue, teeth, etc. There is very little air pressure in the voicing of a whisper. It has been likened to or compared with the pressure of a mercury column of 35 millimeters, while a medium tone, represents a pressure on the mercury column of 175 millimeters, and the highest pitch of the human voice about 900 to 990 millimeters. The larynx (q.v.) is the organ of the voice. The two vocal cords or bands of cartilage in the larynx are much like two rubber bands, subject to variable tension, and positioned so that the air forced through the lungs tends to separate or stretch them. The individual learns to play upon these two strings automatically, sounding high and low notes, and varying the effects in all the ways characteristic of the human voice. Man may be said to possess an interior orchestra, the lungs being the organ bellows, the cords the violin strings, the mouth the horn, the cheeks the sounding boards, the throat the pipe, the lips the pipe-valve, and so on. The hyoid bone and the glottis and epiglottis also play an important part in the mechanism operating the vocal cords, as may be understood by consulting the article on ANATOMY; LARYNGOSCOPE, the instrument used for examining the glottis and larynx.

The voices of children are high-pitched or treble. When the boy attains puberty, there is a change in the larynx, and he sounds lower, usually bass notes. The lower, middle and upper registers of the voice involve a shifting of the laryngeal positions, and this is why a slight conscious effort is required of a singer in going from the natural voice to the falsetto. In regard to the highest development of the human voice in song, the action of the three hollow spaces, nasal, oral and laryngeal, has much to do with the modification and modulation of the singer's voice. These spaces are to the vocal bands what the violin is to the strings; and for every tone and vowel the mucous membrane of the spaces named must be drawn into a special position (including the position of the larynx) before the air in the spaces can be brought into vibration by the action of the vocal bands. But the vibration of the cords alone is never the tone. The surfaces of the mucous membranes are drawn into different shapes, particularly fit to produce tone waves or to disturb them, and to produce in such tone-waves not only fundamental tones, but overtones. The tongue is a large and direct agent in formation, in the middle or oral space, as it is connected with the upper part of the larynx, its derangement in action being alone sufficient to utterly destroy tone, or, on the contrary, when well adjusted and hanging normally in relation to the other voice parts, to give what is termed the silvery quality to the voice. These spaces are as important in producing the modification and modulations of the singing voice as are the vocal cords and intrinsic muscles of the larynx; there being no doubt, that the movements of the larynx depend upon and are controlled by the muscles and movements outside that organ. The control of the motive power, the breath, is of the utmost importance in maintaining the fixation and cord stretching of the vocal mechanism. Consult 'Sound and Speech Waves as Revealed by the Phonograph' (Proceedings,

Royal Society, Edinburgh 1897); Scripture, E. W., 'Speech Curves' (1906); Jennings, A., 'The Voice and Natural Development' (London 1911); Faulkner, R. B., 'The Tonsils and the Voice' (Pittsburgh 1913).

VOICE AND VOICE CULTURE. The art of singing was developed to meet the demands of modern music. That which we understand as the science of voice culture, or the means of cultivating the singing voice that it may be used as a musical instrument, came into being after music had shaped itself to express strong emotional sentiment. In the closing years of the 16th century the attempt to restore Grecian art in its several branches led to the invention of new forms of musical expression. Previous to that time, little, if any, music was written for the solo voice. There was no demand, therefore, for especial training for singing. The new forms given to music were (1) the opera, in which dramatic action was united to musical setting of the story. The story was given out by single voices, by two in dialogue, by three, four or more in unison or harmony. The plot of the opera was, from the beginning, in comedy or tragedy and secular in nature; (2) oratorio, which certainly at first was much like the opera, except that the story was from sacred writ. A form of composition invented at this time was recitative which was, and ever has been, for the single voice. Advances in these forms of composition have exacted more and more of singers. Invention of modern music created the need of special training of the singing voice and advance into larger forms of musical expression and has kept the demand for greater skill on the part of vocalists ever increasing. A modern music came into recognition in Italy (in Florence, about the year 1600) the first definite system of voice culture began there. It was devised by the composers that their operas and oratorios might be sung as they wished them sung. There was no definite plan accepted for general use during the 1st century of modern music.

Every composer sought some means by which to have his compositions well sung, and each followed his own course. In 1686 was born one destined to establish a semblance of order. Niccolo Porpora, born at Naples, became a composer. His operas were very florid and none were found among singers able to cope with them. His earnestness for his own interests made him, an educated man for his age, devise a better system of vocal training than had ever been used. And for the first time was established a vocal method. It was the beginning of the Old Italian method, some form of which was continued to our own time. Unfortunately, Porpora lett no record of his manner of teaching. We must judge what he did from the demand his music made. His writing for solo voices called for great flexibility and range of voice and his phrases were of great length. We must suppose from this that his pupils were taught to sustain the breath a long time, to sing smoothly and rapidly and to touch with delicacy and lightness the notes in the extremes of the voice. Probably his personality was commanding and that he curbed with masterful hand all attempts on the part of his pupils to depart into anything outside these few requirements. Farinelli, one of his greatest pupils, departed from the simplicity of Porpora's rules, but not until after Porpora passed away. It is known that Porpora kept his pupils many years at work on the simplest exercises. It is related that Caffarelli, one of his most noted pupils, studied a single page of exercises for seven years and when he finally became restless, the master said: "You may go now; you are the greatest singer in Europe." Perhaps one reason why so little is known of Porpora's vocal method is because he did not remain long enough in one place to found a school which could preserve records. He wished for fame as a composer and went from city to city to make his works known. His pupils followed. That, on the other hand, spread the good vocal teaching. In every large city of Italy and in many Austrian and German places the effect of his good teaching was felt. Porpora lived till 1767 and will ever have the honor of establishing vocal method. It was not, so far as we know, scientific, yet it was definite and could be understood. His pupils who continued at Naples maintained his traditions conscientiously for a century. Others who were attracted to London, Paris and Vienna kept up a form of Porpora's vocal method. Farinelli, after a wonderful career as singer and politician (having been the power behind the throne of Philip V of Spain), retired to Bologna where he passed the last 23 years of his life. Bologna had the honor of establishing the first great music school (which began in 1482 and was the musical centre of the day. Farinelli did not become a singing teacher by making it his profession, but he trained many of the singers who were connected with the theatre. In this way, he more than any other, handed down the Porpora method. Nearly all the composers of the day came into contact with that method and for the first time in the history of music, vocal method influenced composition. Mozart had singing lessons with pupils of Porpora. Haydn was accompanist to Porpora for three years. Rossini was born into the Bologna life. Bellini, Donizetti and Mercadante were all educated at Naples where the traditions were most rigorously preserved.

Into our own day the influence of the Old Italian method has been projected through two distinct lines: that of Francesco Lamperti and of Manuel Garcia. Each has, perhaps, departed from the old rules, necessitated by the changed conditions of music. Before considering the work and vocal methods of these two men it is well to see if in the remark of Mancini, himself a great singing teacher and a fellow pupil of Farinelli, we may gain a little more definite knowledge of the principles of Porpora. Mancini says regarding Farinelli, "The art of taking and keeping the breath, so softly and easily that no one could perceive it, began and died with him. The qualities in which he excelled were the evenness of his voice, the art of swelling its sound, the *Portamento*, the union of the registers, a surprising agility, a graceful and pathetic style and a shake so admirable as it is rare." So far as known there is no more complete description of vocal method of that day.

Lamperti, judging from his pupils who are very well known, kept most closely to that method. He was born in 1813 and when seven

years of age entered the Conservatory at Milan for the study of piano and composition. He was ambitious to manage opera companies when he became a man and shaped his training for the theatre. He associated himself, eventually, with the manager of the small theatre at Lodi. That seems to have been his only venture in theatrical management, but it served to shape his life in an unexpected manner. Financial resources being small he was forced to train the local singers for the solo parts. He was so successful that many of those peasants attracted attention and were engaged for the theatres of London, Paris, Saint Petersburg and other European cities. It makes the most striking example in history of the power of one man to create a school of singing. Their successes led many great artists to visit Lamperti at Lodi, and his popularity caused the government to make him professor of singing at the Milan Conservatory in 1850. For the next 25 years many of the greatest singers studied with Lamperti and this made Milan the centre of the operatic world. In 1875, Lamperti was retired on a pension, but continued as a private teacher until his death in 1893. Even Lamperti did not write a vocal method. Mr. Griffith, one of his earnest pupils, gathered slips of paper on which he wrote comments for his pupils and from them has given us a little idea of the method. One remark by Mr. Griffith is, "Basing his teaching upon the study of respiration, the taking and retention of the breath by means of the abdominal muscles alone, and the just emission of the voice, he thoroughly grounds his pupils in the production of pure tone." That is not unlike the remark of Mancini about Farinelli's method. If the Old Italian method has come into our day in any degree of purity it has come through the adherence of Lamperti to those principles of breath control.

Manuel Garcia, Sr., was born eight years after Porpora died. In 1812, when 37 years of age, he studied at Naples under Anzani, who was particularly zealous in preserving traditions. Garcia, too, was to be an impresario and his thought was given to the training of singers for his own companies. But, with these duties, he saw the advantage of having a school at London. This was established in 1823. His own children were trained by him and three of them became celebrated. Maria, known as Madame Malibran, was one of the greatest singers of any age but lived to be but 28 years of age. Madame Viardot-Garcia (1821–1910), served as accompanist for her father and learned his method more from absorption than from actual lessons. She grew up in the highest musical life of the day. Manuel Garcia, Jr. (1805–1906), became one of the most important men in connection with vocal method. He sang for a few years in his father's companies, but elected to adopt teaching as a profession. He was one of the first men to become a vocal teacher who did not have special interest in producing his own operas or in preparing singers for his own companies. It is probable that he has the honor of establishing the vocation of voice teaching on professional lines. Whether that be so or not he made scientific investigation of the voice on which he established a distinct vocal method. He invented the laryngoscope, a device for examining the throat, including the vocal chords and larynx. This has become universally adopted by physicians. Garcia was able, with his examinations, to announce definite facts about the action of the throat in singing. Action had been observed previously through sensation and because it had manifested itself through the outer flesh. It is worthy of remark that although earlier teachers were obliged to walk by faith rather than by sight they had not gone far from correct ways. Nor did Garcia's discoveries add much knowledge. It permitted him and his followers to move with greater certainty. It led to the formation of vocal method on the idea of tone-placement. The registers of the voice assumed more definite position as factors in method. Whether Garcia became so interested in the scientific action of tone production and its reflection in chambers of resonance, as to obscure his views of respiration, or whether he became convinced that respiration was not important, does not appear. But he ignored very thoroughly that which was fundamental in Lamperti's work. He established a method with new basic principles, and that method sprang into popularity. At that time in the history of vocal method there were two distinct systems: one based on empiricism; the other on science. The first took into account the sound of the tone and judged what would make it good; the other explained the scientific action which would produce good tone. As each method has produced many noted artists there need be no comment on the merits of either. The advocates of both schools have held quite closely to the tenets of the two great leaders, although modifications, as well as additions, have been made. Modern music continues its greater demands and discoveries in science compel further adjustment of deductions based on scientific vocal research.

In 1845, Mathilde Graumann, now Madame Marchesi, became the pupil of Garcia, the inventor of the laryngoscope. For a time she acted as assistant to Garcia and, as it was just the time of Garcia's deep study which led to the establishment of a new vocal method, it is reasonable to suppose that she was influenced by that in forming her own. Her husband, Salvator Marchesi, was also a pupil of Garcia. The "Marchesi" method is more often mentioned than is any other to-day and it has the Garcia principles for its foundation. Many of the great opera singers have been guided in their education by Madame Marchesi. It is, however, a matter of comment that these artists differ radically in vocal method, and probably the teacher has considered the individuality of her students more than she has adherence to vocal method. Nor would this necessitate departure from Garcia's principles, for such is the subtlety of the mind in dealing with vocal machinery, there is always need of adaptation of method to traits of mind which are individual. And that ability so to adapt may constitute the "Marchesi" method. It may be even the establishment of a new method.

Italy, ever the home of opera, has adopted vocal method which more dramatic music demands. Language is a factor in creating or changing vocal method. The flowing tone of the Italian, with every word ending in a vowel

or liquid consonant and with guttural and harsh consonantal combinations almost eliminated, does not lend itself well to the tone placement of the Garcia school. Nor is the method of Lamperti sufficiently vigorous to meet dramatic demand. A compromise seems to have been effected. Breathing is the basis of it, and it is the breathing of the upper chest, with the abdominal muscles held inward with great firmness. This enables its votaries to utilize to a certain extent the scientific tone placement of Garcia. The combination leads to tone production with a degree of harshness which was foreign to the older Italian method. Few professional singers have become prominent under its leading.

Opera demanding extremely dramatic voice has found favor in Germany, and vocal method has been devised on lines which are not part of either of the older schools. Nor is it possible to make explanation of the German method on scientific grounds. The voice is used explosively and with less attempt to sustain the smooth flow of tone which has ever been deemed essential to good singing. Yet the public has learned to enjoy German singing, which is most convincing proof that there is reason for it. Wagner, it is said, did not hope that his operas would ever be sung well nor could they be given in any school of voice training which existed when they were written. In the German method of training the voice is found a way by which the operas can be sung. And this class of music is the only one to which that method can be applied. Explosive tone is quite out of place in the music of song writers even among Germans.

Language has influenced the formation of a method in vogue among the French singers. The nasal consonants of the French language call for decided nasal resonance, and the vocal teachers of Paris seek to obtain such resonance as the predominating factor in tone production. In the department of breathing they exact high chest breath control. With this as foundation and with exaggerated nasal resonance there is shrillness of tone emission. The difference between French method and modern Italian lies in the point of resonance of tone. The Italian places the tone in the forward part of the mouth, and the French in the nasal chambers, while both use high chest breath control as foundation.

The other nations have no distinctive vocal methods. England and America have been content to follow the lead of other peoples. Many individual teachers have, through their strong personality, made reputations as teachers, and the public has accredited them with vocal methods quite their own. Thus, William Shakespeare made international reputation as having a vocal method. In some particulars it is individual, but it is based on that of Francesco Lamperti which was as nearly as can be the Old Italian method.

One system which had no special home but which has scientific basis and has many advocates is the "overtone" method. Theory claims that every musical tone is compound in that it consists of the vibration of the tone-producing organ as a whole for the initial tone and the vibration of its aliquot parts as added tone. For example, the tone made by the stroke of the hammer on the piano string vibrates the string its whole length, its half length, quarter length and eighth length. Also, the divisions at the third, fifth, sixth and seventh of the whole vibrate. Sensitive ears can detect the lower multiples of the rate of vibration of the note struck. Using the piano string one can demonstrate the truth of this theory. The tones added to initial tone have been called "harmonics," "upper partials" and "overtones." Some vocal teachers believe the vocal chords have action which corresponds to that of the piano string and have constructed a vocal method which seeks to incorporate upon the initial tone an abundance of "harmonics." Other teachers of the overtone method claim that every part of the resonance chamber of the throat and mouth is a point of birth of "harmonics." They then seek to make junction of these voices with the initial tone made by the vocal chords. One ingenious scientist has shown this theory can be illustrated by a series of flames which register what vibration of aliquot parts is given each tone. Photographs are made of the flame. It makes a visible record which enables a student of sufficient intelligence to direct his practice.

In the studios of vocal teachers "open and closed tone" method is often spoken of, but it is doubtful if a distinct vocal method has ever been built on this idea. Garcia advocated using open tone in the low voice and closed in the upper. Lamperti advised open tone throughout the voice, at least in practice on exercises and vocalizes. It would seem as if "open and closed tone" method is a varying adjunct of several methods, rather than distinct vocal method by itself.

In the last few years a theory has been advanced which may serve as ground for a new method. It is, that tone is primordial substance, present in everything, as is electricity; that by stimulating vibration in the vocal machinery at the proper rate to make audible the tone which is present, our musical tone is produced. Voice culture, in this system, consists of stimulating the sounding machinery at just the right degree of vibration, soliciting above all, such counterbalance of effort that the act of singing is unfelt and the appearance of effort hidden. This method further contemplates that transmission of tone is made ampliation of the vibration of the vocal machinery.

Examination of all methods of training the voice in vogue emphasizes the belief that none can have universal endorsement. This comes about because there are so many views of music and of the requirements for singing modern music. All unite in saying that singing should be without effort; but such is the difference in perception of sensation that what seems effortless to one appears charged with effort to another. The latter fact points out the need of some scientific measure by which test may be made of this important element in singing. A barometer or thermometer would establish a vocal method. The one to invent such an instrument has not been found. Garcia opened the way for scientific examination of the voice, but no one has advanced in the science and Garcia's discoveries did not create a method generally endorsed. Among vocal teachers it is comman saying that there are two vocal methods, the good and the bad. Each believes

his to be good, but as they differ very much all cannot be good. All know that breath must be used to create vocal tone; that tone emission must be with comfortable action in the throat; that transmission of tone must be generous and the tone given be vibrant. The way to secure these constitutes good method. Every teacher has his own way by which to attain these desirable ends, and the individuality prevents general acceptance of any one system. Again, vocal teachers who depend on their individuality are little likely to invent any scientific testing machine. Method which can have universal acceptance and application will come only from deductions made by practical teachers working out the suggestions which scientific men make, which will come from invention. The telephone came near showing new forms of transmission and reception of tone. It supplied the idea that tone is awakened into audible vibration and endorsed the teachers of the "Primordial" method. Nor is it certain but that further experiments in which electricity plays an important part will supply views on which to base vocal method. It is a subject of vast importance. In this, vocal methods for singing have been considered because training the voice for that art is supposed to be the most important and extended training the voice can have. When we think of the large number of actors, elocutionists and public speakers and recall that each needs to use true principles of voice culture, the importance of having a definite and universally applicable vocal method seems almost imperative. When we realize that the constantly used conversational voice would be an infinitely more valuable implement of communication between human beings were it cultivated as it might be, the need of perfect (and universal) vocal method assumes large proportions. If, as many believe, voice culture is one of the most valuable prophylactic and therapeutic agents known, such need is absolutely imperative.

Schools of music have been established in all large cities, and of course the study of singing has been made prominent. It has not, as a rule, been the chief study. It has been forced to fourth place, composition, piano and instrumental playing having been given precedence. Wherever the study of singing has been given special prominence it has attracted more students to the school and has made more lasting impression on music. Thus, Lamperti made Milan with its conservatory, noted. The Royal Academy at London has, since the day of Handel, had a large number of great vocal teachers and that has given power to the school. The New England Conservatory and the Chicago College of Music have produced many excellent singers, but the fact remains that none has advocated special vocal method. Training has been on lines widely separated and left entirely to the judgment of individual teachers. As all have produced results, although using means so different, it is evident that training the voice for singing modern music can be had through the personality of the teacher developing the musical nature of the student. This has taken the place of method. Many teachers, in late years, have written treatises on singing and which are intended, although frequently not so claimed, to be descriptions of vocal methods. Garcia's method was described in a book issued about 1865. It has since been revised and simplified. Madame Seiler, Madame Marchesi and Messrs. Randegger, Behnke and Alberto Bach have described their methods in print. Nor must we forget some very excellent works by American writers. Frederic Root, D. A. Clippinger and Edmund J. Myer have written clearly and well on vocal methods. As their works are the latest and they are men grown into the strong thought of present activity, their writings have definiteness which was lacking in many earlier works. There is a growing belief that American teachers are taking the most advanced position with regard to certainty in method, and that study of singing can best be prosecuted with such teachers. That which is most evident in their work is that they combine scientific with empirical teaching, and they bind the whole together with directing power of intellect and soul. At no time has it been possible to ensure that anyone possessing any degree of vocal resources shall become an acceptable singer as it is now. This is true, in spite of the fact that never before has music demanded so much of singers.

Judging from methods of the past and present we may believe that the voice for singing can best be trained on the following general lines, allowing, of course, that individual natures demand departures and special applications.

There are three general departments: physical, intellectual and spiritual. The latter refers to the intuitional and emotional action of the spirit of man. The physical training has in it development of respiration, freedom of the throat and reverberation of tone. Respiration demands that muscles of inspiration and expiration shall be made free and strong and made to balance their action so as to deliver breath pressure to the vocal chords, which make initial tone, in such way that tone is made without apparent effort. This corresponds to the way of the Old Italian method. It seems a simple thing, but the old singers evidently found it necessary to study and practise it every day for years and perhaps for a lifetime. Freedom of the throat means that tone of every gradation of power, from softest to loudest, shall be emitted in purity; that elasticity of muscles shall permit constant and instantaneous changes in the larynx; that the chambers above the larynx which influence quality shall be supple; and that the organs which regulate articulation shall not be interfered with, even in the slightest degree, while performing their duties. Reverberation has in it the whole matter of tone-placement, vibration and transmission of musical sounds. Such use of physical training draws, then, from the empirical ways of the old school, the scientific method of the Garcia system and the ways of the "overtone" method.

The intellectual department of modern method demands of the student knowledge of anatomy and physiology; directing power of the mind; and familiarity with psychology. Education of the objective mind is the controlling factor in this part of vocal method. To small extent has it been used in any earlier methods. It is probable that in that department the strongest factor in modern vocal method is found. For the intuitional or emotional side has ever been used and perhaps singers of the past (notably Farinelli) cultivated this side to perfection.

Intuitional influence in modern method is not left to chance as possibly it has been before. A real student of our times is led to understand his relation to the controlling force of the universe and to utilize the power he may obtain through what is often termed "higher thought." But it is not left to be expressed "intuitionally." That is, the student learns what imagination, sentiment, will and the like are, and then, through his objective mind (intellectual department) directs their influence upon the physical parts. For it is now known that, however carefully, correctly and thoroughly the machinery of voice is used, there is a voice better and more beautiful than such machinery can, by itself, produce. The development of vocal method, thus very briefly outlined, is engaging the serious attention of the best American teachers who make teaching a profession, and there is evidence that such study is making a new vocal method.

FRANK H. TUBBS.

VOICING. See REED, FLUE, AND STRINGED INSTRUMENTS, CARE OF.

VOIRE DIRE (Latin *veritatem dicere*), *in law*, preliminary examination of a juror as to his competency. When a juror is supposed liable to objection for incompetency or otherwise, he is sworn first, not in the cause, but on the *voire dire* — that is, to answer questions relating to his incompetency; and if it thus becomes apparent that he is incompetent, he is discharged without further examination.

VOIT, foit, **Karl von,** German physiologist: b. Amberg, Bavaria, 31 Oct. 1831; d. 1908. He was educated at Munich, Würzburg, and at Göttingen, and in 1863 became professor of physiology at the University of Munich. He was early engaged in scientific researches, his first achievement of importance occurring in 1854, when he proved the presence of urea in the muscular tissues of cholera patients. He subsequently made a specialty of questions of digestion and assimilation. His works are numerous, and among them are included 'Physiologisch-chemische Untersuchingen' (1857); 'Ueber die Kost in öffentlichen Anstalten' (1876); 'Untersuchung der Kost in einigen öffentlichen Ansalten' (1877). He also contributed to Hermann's 'Handbuch der Physiologie' (1881).

VOITURE, vwâ-tür', **Vincent,** French poet and letter-writer: b. Amiens, France, 1598; d. 26 May 1648. He made his literary studies in Paris, then entered the service of Gaston, Duke of Orleans, and with him made a tour in Spain. He won the friendship of Cardinal Richelieu by his epistle on the taking of Corbie, esteemed his *chef-d'œuvre*. He was made chamberlain by the king 1638. His poems mostly are *chansons* and *rondeaux*. More famous than his verses are his letters, in which French prose style was brought to a degree of finish never before reached. The first edition of Voiture's 'Œuvres' appeared at Paris 1650; new revised editions with annotations have been issued by Roux, 1856, and by Ubicini, 1856; a separate revised edition of the 'Lettres' was published by Uzanne, 1856. Consult Magne, E., 'Voiture' (Paris 1911); Rahstede, 'Wanderungen durch die französische Literatur, Vincent Voiture' (Oppeln 1891; Sainte-Beuve, 'Causeries du lundi' (XII, Paris 1851–62).

VOKES, vōks **(Theodosia) Rosina,** English actress: b. 1858; d. Torquay, Devonshire, 27 Jan. 1894. She first appeared at the Alhambra Palace, London, in the 'Belles of the Kitchen.' Then she married Cecil Clay and for a time retired. In 1885–93 she toured North America. She took leading parts in 'The Parvenu,' 'The Schoolmistress,' 'The Milliner's Bill,' 'The Circus Rider,' 'Maid Marian,' and 'A Pantomime Rehearsal.'

VOLAPÜK, vō-lā-peek', a proposed universal language invented about 1879 by Johann Martin Schleyer, of Constance, Germany. The name means "world-speech," being based on English *world* and *speak*, and a number of the vocables are modified English words, the total number in the language being about 14,000, some 1,300 being root-words. In structure the language is simple and extremely regular, and the orthography is entirely phonetic, the words being pronounced as they are written, and vice versa. Its alphabet comprises 27 letters, namely the vowels *a, e, i, o, u, ä, ö, ü,* and these 17 consonants, *b, p, h, y, g, k, l, r, m, n, s, j, c, x, z.* The vowels are pronounced as in German, the consonants as in English, except that *g* is always hard, *s* is always sharp, *c* is like *j*, and *z* is equal to *ts*. There are 10 other consonant signs for sounds peculiar to various languages: there are no silent letters and no diphthongs. About 40 per cent of the root words of Volapük, which usually are nouns, are from English, the rest are chiefly from German, French and Latin. In choosing root words the desiderata were brevity, clearness and ease of utterance: every root word consists of one syllable, a vowel between two consonant sounds; man is *man, dom* is house (Lat. *domus*), *tim* is time; and root words are formed from ordinary words either (1) by substituting a consonant for a final vowel: Eng. pay becomes *pel,* Fr. mer (sea) becomes *mel;* or (2) consonants and vowels are dropped: Lat. pons (bridge) becomes *pon,* Eng. state becomes *tat;* or (3) the most important syllable alone is retained: Lat. sapientia (wisdom) becomes *sap*. Here are some examples of root words from different languages: From Eng. gift, *giv,* lady, *läd,* woman, *vom;* from Lat. finis (end) comes *fin,* flumen (river) *flum,* tensio (stretching) *ten*. From these root words, which are nearly all nouns, are formed the other parts of speech — verbs, adjectives, adverbs — by proper prefixes and suffixes. Nouns have four cases, namely, nominative, genitive, dative and accusative. The nominative is the unmodified root, for example, *vol,* world, is in the nominative case. The genitive adds *a, vola,* of the world; *vola, pük,* world's speech. The dative and accusative respectively add *e* and *i* to the root; *vole,* to the world, *voli,* the world (objective case). The pronouns I, thou, he, she, it, are *ob, al, om, of* and *os,* and they are declined like nouns; *oba,* of me, *ove,* to me; *ala,* of thee, *ale,* to thee; and so on. The tenses of verbs, except the present, are formed by prefixing the vowels *ä, e, i, o,* and *u* to the root; thus *löfob* (*löf,* love, *ob,* I) is I love, *älöfob,* I loved, *elöfob,* I have loved, *ilöfob,* I had loved, *olöfob,* I shall love, *ulöfob,* I shall have loved; by putting *al.* thou, *om,* he,

of, she, in the place of *ob,* I, we get the forms for thou hast loved, he will love, she had loved, etc. By similar devices the various moods are indicated, for example, the ending *ös* added to the present indicative *löfom,* he loves, makes it optative, may he love, *löfomös.* The passive voice is formed by prefixing *p* or *pa.* Thus, *palöfon,* to be loved, *palöfob,* I am loved, *pälöfob,* I was loved, *pelöfob,* I have been loved, *polöfob,* I shall be loved, *pulöfob,* I shall have been loved. The adjective is the noun with *ik* suffixed: *gud,* goodness, *gudik,* good; *yun,* youth, *yunik,* young. The adverb is formed from the adjective by adding *o: gudik,* good, *gudiko,* well. In pronunciation every syllable is long and the accent is always laid on the last syllable of the word. Volapük was received with great favor immediately after the scheme was published, but later declined. See ESPERANTO LANGUAGE; ETYMOLOGY; LANGUAGE, SCIENCE OF.

VOLATILE OILS, or ESSENTIAL OILS, vegetable oils distinguished by the possession of pungent, characteristic odors, and by the fact that they can be vaporized without decomposition, and usually without any considerable residue. The volatile oils differ from the "fatty oils," or "fixed oils" (of which olive oil is an example), from a chemical point of view, in containing little or no true fat.

The known volatile oils are very numerous, and are obtained from plants, or parts of plants, or from vegetable exudations, mainly by the action of heat or pressure, or by the solvent action of fats, chloroform, petroleum ether or carbon tetrachloride. In some cases, as in the extraction of the essential oil in orange peel, a portion of the oil may be obtained by placing the material containing it in horse-hair bags, and subjecting it to pressure. Distillation is also commonly employed, the plants or parts of plants containing the oil being placed in a still with water, the contents of the still being constantly stirred and heated by means of a steam-jacket. The boiling points of the volatile oils are mostly higher than that of water, but as they possess a considerable vapor tension at the boiling point of water, they distil over at that temperature in sufficient quantity to make the process commercially practicable. In some cases it is found to be advantageous to raise the boiling point of the water in the still somewhat by the addition of salt. When the oil that is to be prepared is injured by exposure to the temperature of boiling water, it is customary to extract the oil by macerating the plant with grease. In the preparation of perfumes, for example, it is common to treat the flowers containing the oil with pure lard or paraffin, which is kept fluid by a water-bath. The fat extracts the volatile oil, and when the charged fat is afterward shaken up with alcohol it gives up the oil, in large measure, to the alcohol. The process known as "enfleurage" is essentially the same as the one just indicated, except that it is not conducted by the aid of heat, the grease being allowed to remain in contact with the flowers for a longer time, at a lower temperature; the oil then being recovered from the fat by means of alcohol, as before.

The following are some of the more familiar of the essential or volatile oils:

Oil of Bitter Almonds.— Prepared by distilling the pulp that is left after the fixed oil contained in the almonds has been expressed by pressure. As at first prepared it contains a considerable quantity of prussic acid, and in this stage it is very poisonous. After it has been freed from the prussic acid it is known, commercially, as "Oil of bitter almond, S. P. A" (without prussic acid). When thus purified the oil consists mainly of benzaldehyde, C_6H_5CHO, and boils at 179° C.

Oil of Bergamot.—Prepared from the unripe fruit of *Citrus bergamiæ,* by squeezing the rind by hand and wiping the expressed oil off with a sponge, the sponge being squeezed at intervals into a collecting vessel. It contains a considerable quantity of the hydrocarbon citrene. $C_{10}H_{16}$, together with other compounds whose precise nature has not yet been thoroughly investigated. The oil is extensively used in perfumery. Oil of bergamot is also made synthetically.

Oil of Cloves.— Obtained by distilling the flower buds of *Caryophyllus aromaticus.* It consists of a mixture of sesquiterpene and eugenol and is heavier than water.

Oil of Eucalyptus.— Prepared by distilling the leaves of the eucalyptus tree. It is pale yellow in color and is used in medicine and in perfumery. Its chief constituent is eucalyptol or cineol, $C_{10}H_{18}O$.

Oil of Lavender.— Prepared by the distillation of lavender flowers, the best quality being made from *Lavandula vera.* Oil of spike is an inferior variety, prepared from *Lavandula spica.* Oil of lavender is used in perfumery and oil of spike is extensively employed in porcelain painting.

Oil of Lemon.— Prepared from scarcely ripe lemon rinds by the sponge method, described above under *Oil of Bergamot.* An inferior variety is also prepared by distilling the residues remaining from this process. Oil of lemon consists chiefly of limonene, $C_{10}H_{16}$, a hydrocarbon which resembles the citrene of oil of bergamot, but which differs from it in certain particulars. Oil of lemon is used in confectionery and perfumery.

Oil of Origanum, Oil of Thyme, or Marjoram Oil.— Obtained by distillation from certain species of marjoram.

Oil of Peppermint.— Prepared by distilling the herb *Mentha piperita.* It consists chiefly of a solution of menthol in various terpenes and is used in medicine and as a flavoring, especially in confectionery.

Attar (or Otto) of Roses.— Prepared by the distillation of certain species of roses and especially from *Rosa damascena,* which is cultivated in Turkey. It is used extensively in perfumery and, on account of its high commercial value, is often (and perhaps always) adulterated. The most common adulterant is "geranium oil," which is manufactured expressly for adulterating attar of roses, by distilling a species of grass that grows in India.

Oil of Turpentine.— Prepared by distilling the resinous exudations from certain species of pine trees. American oil of turpentine is prepared chiefly from *Pinus australis* and consists mainly of dextro-pinene, a hydrocarbon having the formula $C_{10}H_{16}$, and boiling at 156° C.

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VOLBORTHITE. A vanadium ore, a hydrous vanadate of copper barium and calcium, occurring in Arizona and Colorado.

VOLCANIC ASH. See PYROCLASTIC; also TUFF.

VOLCANIC BOMBS. See PYROCLASTIC.

VOLCANIC NECK, or PLUG, the hard igneous plug filling the throat of an old volcano. Such volcanic necks often resist erosion and stand out as buttes as in the Mount Taylor region of New Mexico or in the Puy region of France.

VOLCANIC ROCKS. Those igneous or pyrogenic rocks which have reached the surface through volcanic necks or through fissure eruptions. Volcanic rocks were formed in all ages of the earth's history, but were generally more or less restricted geographically. Contrasted with them are the rocks which cooled beneath the surface to which the name plutonic is generally applied. Extrusive (effusive) and intrusive, or on its surface, extrusive. The plutonic. At best this distinction is only one of convenience and has no great scientific value. Among the more important rocks of this type may be mentioned obsidian, pumice, rhyolyte, trachyte, felsite, andesite and basalt (qq.v.). See section on *Igneous Rocks* in article on ROCKS.

VOLCANISM, a term used to describe all the phenomena dependent on the movement of fluid or molten rock, whether within the earth, intrusive, or on its surface, extrusive. The latter is the popular conception of volcanism and is manifested through the activity of volcanoes. See BATHOLITH; VOLCANO; LACCOLITH, etc.; also the section on *Volcanism* in the article on GEOLOGY.

VOLCANO (Ital. *volcano;* from Lat. *Vulcanus,* the god of fire; originally the volcano of Etna, the fabled abode of the god), an opening in the crust of the earth from which proceeds heated gases, volumes of steam, eruptions of ashes mixed with scoriæ and large stones and molten rock called lava. The phenomenon is chiefly limited to certain regions in different parts of the earth, known as volcanic districts; and in these districts established and permanent vents may continue constantly sending forth steam and other vapors, like Stromboli on one of the Lipari Islands in the Mediterranean; or eruptions of more severe character may take place at irregular intervals. The matter thrown out from volcanoes generally accumulates around the openings or craters till they build up a hill, or even a mountain several thousand feet high; but the vent may continue for a long time at a low level, and is even formed beneath the sea, sometimes without rising above the surface. Instances have occurred of a volcanic eruption suddenly forming an island in the midst of the sea. Other volcanoes that have been suddenly raised up have remained permanently in the form of mountains. Such is the volcano of Jorullo (q.v.) in Mexico. The greatest volcanic mountains, as Etna, Hecla and Vesuvius, are produced by accumulations of volcanic matters, as beds of lava, ashes and scoriæ, sometimes alternating with beds deposited beneath the sea charged with the vestiges of marine animals, the collection of which must have occupied long periods of time. The form of the cone depends on the nature and material of the eruption. Ash forms steep slopes; fluid lava, low flat cones. Volcanoes sometimes remain inactive so long as to lose their peculiar character; but they may at any time break forth again. Vesuvius was not known to the ancients as a volcano, though it was apparent from the form of the mountain and the materials of which it was composed that such must have been its character at some former period. Volcanoes which show outbursts of more or less frequency are called *active.* Those known to have been active in historic times, but long quiescent, are called *dormant.* Ancient volcanic activity took place in Hungary, central France, eastern United States, the eastern Rocky Mountains, the British Isles and other places, of whose eruptions no record exists. Such are termed *extinct* volcanoes, but many so-called extinct vents become active again. The Mississippi Valley is almost without evidence of volcanism since very early geologic times. Probably the most general understanding of a volcano is of a conical hill or mountain. There is, however, no limitation as to height, some comparatively low volcanoes, such as Pelée and Soufrière, manifesting violent and disastrous eruptions, while, on the other hand, such lofty peaks as Kilimanjaro, Cotopaxi and Popocatapetl are of a volcanic character.

As generally considered, a volcano is divided into three fundamental parts — the base, or elevation proper; the cone, rising steeply from the base; and the crater, the depression occurring at the summit of the cone. These parts are not invariably present in distinct form in all volcanoes; in many, eruption takes place without any crater. Nor do eruptions always proceed from the crater, when present; the crater being located at the summit of the cone, while activity is in many cases exhibited independent of the crater by supplementary craters in additional cones, broken out on the slopes of the mountain. These are known as parasitic cones and craters. Craters of course vary greatly in size and sustain no proportional relation to the mountain or elevation. Haleakla (island of Maui, Hawaii), 10,000 feet, has a crater of 20 miles' circumference; but the crater of Orizaba (Mexico, on the boundary between the states of Vera Cruz and Puebla), three and one-half miles high, has a crater with a diameter of less than 1,000 feet.

The causes of volcanic action are still much obscured, though various explanatory theories have been advanced. In early times, the rising cloud of dust attending an eruption, lit by the glow of the lava, came readily to be regarded as mingled smoke and flame, and blacksmith-gods were thought to have their forges in the subterranean regions. At the present time many believe that volcanic lavas are made up of still uncooled portions of a once molten earth squeezed out by compression. Many geologists, however, no longer believe that the earth was ever a molten mass. These latter account for lava in various ways. Some believe that the rocks are hot enough to melt, if not prevented from doing so by pressure, and hold that whenever folding produces an arch or anticline the pressure is removed from the

rocks below and they at once become fluid. Others hold that heat is generated by friction during great crustal movements, causing the rocks to melt. Other and more complicated views are held, but they are all little more than speculation, and the problem is still unsolved. Volcanoes are, in general, to be found in areas where the earth's crust is of an inferior strength. These areas are naturally ocean-basins, the territory bordering on such basins, or the ranges of mountains marking or flanking the outlines of the continents. With the possible exception of Wrangel (Alaska) no active volcano exists far inland save in a district which is either the scene of a comparatively recent displacement or is marked by an instability in the earth's crust. One of the chief lines of distribution surrounds the Pacific Ocean, running along the western coast of South, Central and North America; the Aleutian Islands, Kamchatka and the Kurile group; Japan, Formosa, the Philippines, the Moluccas, the North Hebrides, New Zealand and South Victoria Land. Included within this line are numerous other volcanoes, such as Kilauea, Mauna Loa and Mauna Kea (Hawaii) and those of the Polynesian Islands. In the Atlantic section are the Antilles, the Canaries, the Azores, the Cape Verdes, Iceland, Madeira, etc. The European line follows the Mediterranean and is continued into eastern Asia, about the Caspian. It includes the Lipari Islands, the Ægean Islands, Etna, Vesuvius, Ararat and Demavend. J. W. Judd ('Volcanoes' 1881) estimated that there are from 300 to 350 vents of customary activity. There are perhaps about an equal number whose latest activity was at a date comparatively recent. Submarine volcanoes are known at many points.

The phenomena of volcanic activity are numerous and varied. A great portion of the material upheaved in an eruption is lava. The kinds of rock composing this are largely silica and silicates, those containing a relatively small percentage of silica being called basic and those containing considerable silica acid. The acid variety of lava is usually the lighter colored; sometimes it does not move from the lava vent and when it does it generally proceeds a short distance only, solidifying in a thick mass because of its viscosity. The basic is much more liquid and covers the slopes of the mountain or spreads over the adjacent plains. Examples of the latter are the basic flows that cover 200,000 square miles in the Deccan and bury most of the Columbia and Snake River plateau. When lava is imperfectly fused and large quantities of steam are present, the lava becomes, as it approaches nearer the surface, filled with bubbles, which continue to expand, lightening the lava and facilitating its upward movement. At the surface the lava is torn apart by the steam, the fragments being hurled high in the air. These fragments are known as cinders or pumice and, when finer, ashes. Mudflows, such as destroyed Herculaneum, are merely mixtures of volcanic ash with water from steam or falling rain. Violently explosive eruptions are most common in volcanoes that have long intervening periods of quiet, because the vents become choked. The Krakatoa (q.v.) eruption of 1883 was extremely violent. The volcano on the Lipari Islands is in almost constant eruption but vessels passing do not fear danger. There are also numerous accessory phenomena, such as earthquakes (see EARTHQUAKE); electric and magnetic disturbances and various acoustic manifestations. The explanations of these phenomena have not yet been satisfactorily reached. One of the most remarkable examples was the disturbance of the magnetic field throughout the world which accompanied the Pelée eruption of 8 May 1902. Contrary currents of air also occur, some advancing before the clouds of the eruption, others moving toward the volcano, apparently into vacua caused by the abrupt explosion of steam. The geysers of Yellowstone Park, the solfataras (vents from which proceed sulphurous fumes) of Italy, etc., are signs of a decreasing volcanic activity in the areas where they occur. Consult Darwin, 'Volcanic Islands' ('Voyage of the *Beagle*' 1839); Lyell, 'Principles of Geology,' (Vol. I, 1872); Green, 'Vestiges of a Molten Globe' (1874); Dana, J. D., 'Characteristics of Volcanoes' (New York 1890); Judd, J. W., 'Volcanoes' (New York 1881); Scrope, 'Volcanoes' (1872); Mallet, 'Volcanic Energy' ('Philosophical Transactions' of the Royal Society 1873); Russell, I. C., 'Volcanoes of North America' (New York 1897); Heilprin, 'Mont Pelée and the Tragedy of Martinique' (1903); Geikie, Sir A., 'Ancient Volcanoes of Great Britain' (London 1897); Hull, E., 'Volcanoes, Past and Present' (London 1892); Hitchcock, C. H., 'Hawaii and Its Volcanoes' (Honolulu 1909); Iddings, J. P., 'The Problems of Volcanism' (New Haven 1914); Bonney, T. G., 'Volcanoes' (London 1898). Consult also articles on individual volcanoes, Pelée, Krakatoa, etc.

VOLCK, fŏlk, **Adalbert J.,** American art connoisseur: b. Augsburg, Germany, 14 April 1828, a scion of the famous Strakonitch family of Poland; d. 26 March 1912. His youth was spent at the art centres of Nuremberg and Munich, where he frequented the studios of the masters there assembled. Becoming involved in the Revolution of 1848 he was obliged to flee the country and made his way to America. After visiting various cities he in 1849 settled in Baltimore and thenceforward devoted the greatest portion of his time and immense energy to the varied forms of art. About the year 1859 he established himself in the suburb of Catonsville and when the Civil War broke out shortly afterward he espoused the Southern cause and soon became a special agent of the Confederate government, scorning any pay and frequently running the blockade into Virginia as the carrier of despatches. When General Butler on 13 May 1861 seized Baltimore, Dr. Volck's artistic ire was roused and he began making a series of cartoons of the Northern leaders, which have come to fame as the years have passed. Published surreptitiously at first by the artist himself, they have since been republished a number of times. He was a personal friend of President and Mrs. Jefferson Davis and had the good fortune to sketch a portrait of Stonewall Jackson on the field not long after the second battle of Bull Run. Another phase of Dr. Volck's many sided artistic career was his notable connection with amateur theatricals in Baltimore shortly after

the close of the Civil War. The success of his artistic efforts on the stage was truly astonishing and will long be remembered by those who were fortunate enough to see them. The closing years of his long life were spent in the midst of his own artistic creations with which his home in Baltimore was literally filled. The last important piece of silversmithing executed by the artist was a memorial shield to Southern women made in the year 1909. It was dedicated by the venerable craftsman to the women of the South "as a continual reminder to those of the present generation of the splendid example of self-sacrifice, endurance and womanly virtues displayed during the war between the States, and which still exists as an important factor in making the New South greater and more prosperous than ever." These are his own words in explanation of the thought that inspired him while at work on this beautiful creation of the imagination.

A fuller account of his life and work may be found in George C. Keidel's 'Catonsville Biographies' (1915).

VOLE, a small rodent, belonging to the *muridæ,* and distinguished by the enamel of the rootless molar teeth being folded in the form of a double series of alternating triangles. The name is of British origin, and while used in Canada and Australia is seldom heard in the United States. The ears are very short and rounded, and the soles of the feet are hairless and tuberculate, while the tail is relatively short. The body is stout and heavy, the legs short and the movements clumsy. The voles and their immediate allies form a sub-family (*Microtinæ*) of the *Muridæ,* the meadow-mice (q.v.). Consult Miller, N. A. Fauna No. 12, United States Department of Agriculture; Bailey, id. No. 17; and Stone and Cram, 'American Animals,' New York, 1902.

VOLGA, vŏl'gă, a river in Russia, the longest in Europe. It rises among marshes and small lakes beside the Valdai Hills, in the government of Tver, at an elevation of about 550 feet above sea-level, and falls into the Caspian Sea by many mouths, at Astrakhan. Its basin has an area of about 563,300 square miles, and its entire course, including windings, is about 2,400 miles in length, while its fall from source to embouchure is only 630 feet. It flows at first southeast about 90 miles to Zubtzof, thence generally northeast past Tver to Mologa, thence east by south past Yaroslaf, Kostroma and Nijni-Novgorod, to the vicinity of Kasan. Here it turns south, flows circuitously south-southwest, past Simbirsk and Saratof to Tsaritsyn and Sarepta, making a marked eastward bend at Samara, and thence southeast to the Caspian. At Tsaritsyn it sends off a branch, the Akhtuba, which flows parallel to the main part of the river, and is connected with it by many cross branches. Its principal affluents are the Oka and Kama, the one joining it from the southwest, the other from the northeast. Some geographers have held that the Oka is really the main stream, being larger and having a greater drainage area than the Volga above the junction. The Volga is navigable almost from its source, and below Nijni-Novgorod it floats quite large vessels; but its navigation is impeded by shallows and sand-banks, and in winter by ice. Passenger steamers similar to those of American rivers ply upon it. The most important river ports, in the order of traffic, are Novgorod, Tsaritsyn, Rybinsk and Astrakhan. Before the war about 10,000 vessels annually passed into the river mouth. By a judicious system of canals it communicates with the Caspian, Baltic, Black and White seas. It has a large delta of eight large and 190 smaller streams, spreading to an extreme width of 75 miles. The principal channel is on the southwest side of the delta, and is normally about four miles wide at the mouth. Several of the delta streams flow approximately parallel to the main channel for 150 miles from the discharge in the Caspian. The short railway from Tsaritsyn to the river Don has diverted much of the traffic from the lower Volga and the Caspian to the lower Don and the Sea of Azov. The banks of the Volga are fertile, and often well-timbered. The river abounds in fish, particularly sturgeon, carp and pike of extraordinary size.

VOLHYNIA, vŏl-hĭn'ĭ-ą, Russia, a southwest government, bounded north by Grodno and Minsk, east by Kief, south by Podolia, and west by Austrian Galicia and Poland; area, 27,699 square miles. The capital is Zhitomir; the people are mostly Slavs. It was a part of Poland before its absorption by Russia in 1794. In the south there are spurs of the Carpathians, but the north is low. The whole drainage is carried to the Dnieper by numerous small streams. The Western Bug is the largest river. The climate is mild, equable and in general healthful. Immense forests cover a large area of the northern section; the southern portion is mainly agricultural. The soil is almost all remarkably fertile, producing abundant crops of all kinds of grain, particularly wheat of excellent quality. Beets and tobacco are important crops. The products exported are mainly timber, grain, cattle and wool. Pop. about 4,241,800.

VOLITION. See WILL.

VOLK, Douglas, American artist: b. Pittsfield, Mass., 23 Feb. 1856. He acquired his art by study at Rome, Italy, and with Gérôme in Paris (1873–78). He exhibited at the Paris Salon in 1875. He was instructor at Cooper Institute, New York (1879–94; 1908–12); instructor of the Art Students' League; organized the Minneapolis School of Fine Arts (1896) and has been instructor in the National Academy of Design, New York, since 1910. He has won innumerable medals and is a member of many societies. Good examples of his work are found in most American collections, e.g., in the Carnegie Museum, Pittsburgh, Pa.; in the Corcoran Gallery at Washington, D. C.; in the Pittsfield Museum; in the Minnesota Capitol; in the National Museum at Washington; in the Montclair (N. J.) Art Museum; in the Metropolitan Museum of Art, New York; in the National Arts Club; in the Rochester Memorial Art Gallery; in the Muskegon, Mich., Art Museum; in the Omaha Art Museum and in the Portland, Me., Art Society, etc.

VOLK, Leonard Wells, American sculptor: b. Wellstown, N. Y., 7 Nov. 1828; d. Osceola, Wis., 19 Aug. 1895. He was employed as a marble cutter in his father's shop and devoted his spare time to modeling, producting a bust of Henry Clay among his first pieces of work.

Later he studied art in Italy (1855–57) under the patronage of Stephen A. Douglas, and on his return established himself in Chicago, where he modeled a bust of Douglas. He produced many works, including the life size statues of Douglas and Lincoln (1876) in the Illinois State capitol.

VOLKMANN, fōlk'män, **Alfred Wilhelm,** German physiologist; b. Leipzig, Germany, 1 June 1801; d. Halle, Germany, 21 April 1877. He was educated in Leipzig, London and Paris, was appointed professor of physiology at Dorpat in 1837, and in 1843 accepted the chair of physiology and anatomy at the University of Halle. He made a specialty of the study of the nervous and optic systems. He writings include 'Anatomy of Animals' (1831–33); 'The Independence of the Sympathetic System of Nerves' (1842); 'Elasticity of Muscles' (1856); 'Physiological Researches in the Department of Optics' (1863–64), etc.

VOLKMANN, Richard von ("RICHARD LEANDER"), German surgeon and author, son of Alfred Wilhelm Volkmann (q.v.): b. Leipzig, Germany, 17 Aug. 1830; d. Jena, Germany, 28 Nov. 1889. He was educated at Halle, Giessen and Berlin, in 1857–67 was private-docent of surgery at Halle, becoming professor of surgery and chief of the hospital at that university in 1867. He was a surgeon in the army during the wars of 1866 and 1870–71, becoming surgeon-general in the latter war. He was eminent as a lecturer, made many important investigations in surgery and pathology, and was among the pioneers in introducing the surgical methods of Lister into Germany. He wrote 'Traumereien au französischen Kaminen Märchen' (1871; 24th ed., 1894); 'Aus der Burscheuzeit' (1876); 'Gedichte' (1877); while among his professional writings are 'Beiträge zur Chirurgie' (1875); 'Be merkungen über einige vom Krebs zu trennende Geschwülste' (1858), etc.

VOLKMANN, Wilhelm Fridolin, RITTER VON VOLKMAR, German philosopher: b. 1821; d. 1877. He was born and educated at Prague, where he later was made professor of philosophy. He is probably the most conspicuous expounder of the general principles of Herbart's psychology. These are set forth in his 'Lehrbuch der Psychologie' (3d ed., by Cornelius, 1884–85).

VOLLON, vŏ-lôṅ, **Antoine,** French painter: b. Lyons, 20 April 1833; d. 1900. He studied at Lyons and Paris, and exhibited for the first time at the Salon in 1864. At the following year's exhibition he received a medal, also at the salons of 1868 and 1869. He was remarkable for his technique and although he painted figures and landscapes excelled in the delineation of still-life. Among his pictures of this kind are 'Armor'; 'Curiosities'; 'Sea Fish,' and 'The Pumpkin,' this last being in the collection of William Schaus, New York.

VOLNEY, vŏl'nĭ (Fr. *vŏl-nā*), **Constantin François de Chassebœuf,** COMTE DE, French author: b. Craon, Anjou, 3 Feb. 1757; d. Paris, 25 April 1820. He traveled in Egypt and Syria, and urged upon France the conquest of the former in his 'Considérations sur la guerre actuelle des Turcs avec les Russes' (1788). Elected to the National Assembly in 1789, he was imprisoned for opposition to the Terror, and on his release made a tour of the United States, described in 'Tableau du climat et du sol des Etats-Unis d'Amérique' (1803). After his return he became senator. His best known work is 'Le ruines ou méditations sur les révolutions des Empires' (1791), a vision of a historico-philosophic sort, in which, near the ruins of Palmyra, representatives of all civilizations and faiths pass by and are reviewed. Consult Berger, 'Études sur Volney' (1832); Barni, 'Les moralistes Français' (1873).

VOLOGDA, vō-lŏg-dä, Russia, (1) a town, capital of the government of the same name, on the Vologda, in the southwest of the government, in a beautiful district extensively occupied with gardens, 35 miles east-southeast of Petrograd. It consists chiefly of old wooden houses, with a few stone buildings in the modern style in the chief square, and has manufactures of linen, lace, soap, candles, glass, leather, etc. Pop. about 41,600. (2) The government of Vologda in the northeast of Russia is bounded north by the government of Archangel; east by the Ural Mountains; south by Perm, Viatka, Kostroma and Yaroslaf; and west by Novgorod and Olonetz; area, 155,265 square miles. The surface consists generally of a plateau covered with woods, lakes and morasses. The drainage almost wholly belongs to the basin of the Northern Ocean, most of the rivers being tributaries of the Dvina. The great wealth of the government consists in its forests, which furnish timber and charcoal. Pop. 1,772,200.

VOLPONE, or THE FOX. Jonson was a colossus. An autocrat, a scholastic, a rider of hobbies, a combatant, he overstrides the ordinary men who swarm about his ankles and snap at his shins. 'Volpone, or The Fox' was the play with which Jonson's most fortunate period began. In 1598 he had introduced the comedy of humors, and in 1605–06 returned to this form with 'Volpone.' It is significant of Jonson that 'Volpone' should have been produced in college halls and should have been dedicated to the "two famous universities." Not a college man himself, Jonson's plays served to reconcile the universities with the popular drama after their long alienation. Jonson sought to apply to popular drama the academical rules for which the learned had been contending. He tells us in the prologue that the play was done in five weeks without collaborator and that no eggs or custards are broken for comedy.

In spite of his assumption to check up his fancy by reference to rules of the ancients, the play is quite loose in construction. It violates the unities of place and action. It has a vaguely moving under-plot of topical hits revolving around Sir Politick Would-be and his talkative wife. After the first act the plot resolves itself into a succession of stage tricks, the changing of disguises and identities, the farce of confusion and doors. When the plot seems on the point of running out, Volpone disguises himself as Barabas had done in 'The Jew of Malta' and goes forth to seek new complications.

The author's purpose of moral censure is revealed in the characters. Volpone is the Fox who starts out to best "the Vulture, Kite,

Raven and Gorcrow.» More than a miser he is a wily villain who serves his turn by pitting knave against knave. But Volpone himself is dwarfed by his familiar servant Mosca. Mosca, the parasite of Latin comedy, becomes in this play the purest example of malevolence in English drama. Iago had the charm of heroism; Bosola of 'The Duchess of Malfi' is given moments of doubt. Not so with Mosca. «I fear I shall begin to grow in love with my dear self,» she says. In the end he proves that there is no honor even among thieves of his *ilk*. These two are the chief figures. All the others are dupes or fools, with the exception of Celia, the passages of whose tragic story seem torn from another and more elevated type of play.

'Volpone' was played at the Globe Theatre in 1605, and later at the universities. It was printed in quarto in 1607. After the Restoration it was revived, and according to Downes «proved very satisfactory to the town.» It was last done, unsuccessfully, by the elder Colman, a century later at the Haymarket. Coleridge praised the play for «fertility and vigor of invention, character and language.»

THOMAS H. DICKINSON.

VOLSCI, vŏl'sē, an ancient Italian tribe dwelling in Latium, on both sides of the river Liris (Garigliano). They had a republican government. Their principal city was Corioli, from which Coriolanus derived his surname. After having several times endangered the Roman state, they were conquered and absorbed in the Romans, and thus disappeared from history as a distinct people, like the other tribes of Latium (338 B.C.).

VOLSK, vŏlsk, or **VOLJSK,** Russia, a town in the province of Saratov, on the Volga, 80 miles northeast of Saratov. It has a technical school, normal school, etc., ironworks and tanneries. Large quays extend along the river, and trade is carried on in tallow and skins with Petrograd, in fruit with Nijni Novgorod, and in corn with Astrakhan and Rybinsk.

VOLSUNGS, vŏl'soongs, a heroic race celebrated in old German legend. Volsung or Walsung, the grandson of Odin, stands forth as the original ancestor. The most interesting and romantic figure in this line of heroes is Volsung's son, Siegmund. Sigfried or Sigurd, hero of the 'Nibelungenlied,' is the same race. The old Icelandic Volsungasaga, which has been followed by William Morris in his 'Story of Sigurd the Volsung' contains the original legend.

VOLT. See ELECTRICITY; VOLTA, ALESSANDRO.

VOLTA, vŏl'tă, **Alessandro,** Italian physicist and pioneer in electrical discovery: b. Como, 18 Feb. 1745; d. there, 5 March 1827. In 1777 he paid a visit to Switzerland, where he became personally acquainted with Haller at Bern, Voltaire at Ferney and De Saussure at Geneva. Two treatises, published in 1769 and 1771, in which he gave a description of a new electrical machine, laid the foundation of his fame. In 1774 Volta became rector of the gymnasium in Como and professor of physics. In 1779 he was transferred from Como to Pavia to fill the chair of natural philosophy in the university of that city. Here he occupied himself entirely with electrical researches. He had previously (1777) invented the electrophorus (q.v.), and his invention of the electroscope (q.v.) (also 1777), was an important improvement. His observations upon the bubbles which arise from stagnant water led him also to some valuable discoveries in regard to gases. The electrical pistol, the eudiometer, the lamp with inflammable air, the electrical condenser and other inventions, are among his claims to renown. He next turned his attention to some of the atmospherical phenomena, such as the nature of hail, and subsequently increased his reputation by the invention of the Voltaic pile (1800). In 1782 he had made a tour through France, Germany, England and Holland. In 1794 he received the Copleian medal from the Royal Society of London, for his paper upon the condenser; and in 1801 his electric apparatus attracted so much notice in France that Napoleon invited him to give an account of his invention before a commission of the Institute, and when the commissioners made their report, proposed that a gold medal should be awarded the inventor in recognition of his services to science. He was also decorated with the cross of the Legion of Honor and the order of the Iron Crown, and was raised to the dignity of senator of Italy, with the title of count. In 1804 he resigned his professional duties. Antinori edited a collection of his works (1816). Consult Mocchetti, 'Vita del Conte Volta' (1838).

VOLTA, West Africa, a river of Upper Guinea, which, rising in the Kong Mountains or highlands behind the Ashanti country, runs south between Ashanti and Dahomey, and reaches the Bight of Benin through the east part of the British Gold Coast at Adda. To left and right of its mouth it forms great lagoons, and on the bar across the mouth a heavy surf runs. With its chief tributary the Black Volta its total length is about 850 miles, 250 of which are navigable in the flood season.

VOLTA BUREAU, The, Washington, D. C., for the increase and diffusion of knowledge relating to the deaf, was founded and endowed by Alexander Graham Bell (q.v.) in 1887. It was the outgrowth of extensive researches he engaged in during the years 1878–83, to determine the causes of deafness and to what extent the human race is susceptible of variation by selection. The bureau derives its name and its endowment from the fact that the Volta prize, created by Napoleon, was conferred by France upon Dr. Bell for the invention of the speaking telephone. The 50,000 francs received was invested in laboratory equipment and experiments that resulted in the invention of the phonograph-graphophone. From his share of the amount received from the sale of the fundamental patents of the talking-machine industry, and for discovering and giving Graphonic art commercial practicability, he set aside the sum of $100,000 as an endowment fund «for the increase and diffusion of knowledge relating to the deaf.» Housed in a building of classical architecture, the Volta Bureau was the property of its trustee, Alexander Melville Bell, and his successor, Charles J. Bell, from 27 June 1887, until 1909, when, at the suggestion of its founder, it was presented with other property to The American

Association to Promote the Teaching of Speech to the Deaf, an association founded and endowed by Dr. Bell in 1890. In furtherance of its primary purpose, the Volta Bureau has printed, or reprinted, and freely distributed, in the form of leaflets, pamphlets or books, several hundred thousand contributions to knowledge in the hope that persual would serve to broaden views concerning the deaf. It has published a few books that it sells at cost or less. It maintains a fireproof reference library, and is endeavoring to include in its unique collection of literature relating to the deaf a copy of every book, periodical, pamphlet and leaflet relating to any phase of deafness and published in any part of the world during any period. Among its other functions, the Volta Bureau serves as a world's clearing-house, or medium of exchange, between the schools and the various associations of the deaf in all parts of the world. It distributes among foreign schools and associations the reports and literature of American schools and associations and vice-versa. It also serves as a bureau of information for parents and friends of deaf children, for physicians, otologists, the clergy, and all who desire available information concerning any phase of deafness. For the benefit of its members the association maintains a teachers' agency at the Volta Bureau, where parents, school officials and others who are members may secure names and addresses of available teachers, free of charge. The Volta Bureau publishes *The Volta Review; The Speech and Speech-Reading Magazine,* an illustrated monthly periodical presenting helpful essays on live subjects of vital interest to thinking men and women working to promote the welfare of the deaf and for the betterment of humanity.

VOLTAIC BATTERIES. See ELECTRIC BATTERIES.

VOLTAIC CELL. See ELECTRIC BATTERIES.

VOLTAIC PILE, the galvanic pile as first devised by Volta. See ELECTRICITY.

VOLTAIRE, vŏl-tār, **Jean François Marie Arouet,** French author and free-thinker: b. Paris, 21 Nov. 1694; d. there, 30 May 1778. He was destined for the legal profession, but his inclination for literature was so decided that he never seriously entered upon it, and the success of his first tragedy 'Œdipe,' brought out in 1718, decided him. It is traditionally recorded that this play was finished, and that two cantos of his 'Henriade' were written in the Bastille, where he was confined (May 1717, to April 1718), on account of certain satirical verses on the regent, the authorship of which was ascribed to him. The success of his tragedy at once made him the fashionable poet of the day, and for the next eight years he resided mainly at Paris. It was about the beginning of this period that he changed his paternal name of Arouet into Voltaire, which latter name is most probably explained as an anagram of Arouet l. j. (le jeune—the younger, he having an elder brother). Voltaire suffered a second imprisonment in the Bastille in 1726, the occasion of which was his sending a challenge to the Chevalier Rohan, by whom he had been insulted. This imprisonment lasted but a month, and on being liberated Voltaire determined to seek greater liberty in England, whither he had been invited by Lord Bolingbroke. His residence in England lasted till 1729, and there he acquired some knowledge of English literature (Shakespeare, Pope, Swift, Addison), and made himself acquainted with the writings of the English freethinkers, Toland, Tindal, Collins, Shaftesbury and others. After his return he lived chiefly at Paris till 1734. In the course of his second Parisian residence he raised himself from very moderate circumstances to a condition of affluence, not by literary labor, but by monetary enterprises in connection with a government lottery, the corn-trade and army contracts. From 1734 to 1749 his principal place of residence was at Cirey, in Lorraine, where he lived with the Marchioness due Châtelet, with whom he had become intimate in July 1733. The death of the marchioness in 1749 deprived him of his retreat, and in the following year he accepted the often repeated invitation of Frederick the Great to come and live at his court at Potsdam. Here he was received with the greatest honor, but the good understanding with the king did not last long, and in 1753, after numerous unpleasant scenes, Voltaire quitted the Prussian court. Before returning to France he visited one or two of the minor courts of Germany. At Frankfort, Frederick caused him to be detained in order to recover from him a collection of poems by the king containing a number of satires on several princes, some of which Voltaire had maliciously exhibited at the courts he had visited. Early in 1755 he removed to Geneva, and for the remainder of his life lived mainly either in Switzerland or close to its borders. About 1758 he fixed his residence with his niece, Madame Denis at Ferney, in the Pays de Gex, a district that at one time belonged to the counts of Geneva, and from this time this was his sole place of abode. Under his care the village of Ferney, which in 1758 was a part of an estate he acquired, contained only 49 peasants in a miserably poor condition, became a thriving place, and in 1778 numbered 1,200 inhabitants, among whom Voltaire lived almost as a sovereign prince. In his retirement he became known to all Europe as the patriarch of Ferney, and received a constant succession of visits from persons of rank and fame, and kept up an immense correspondence, which included in its range most of the crowned heads of Europe. In February 1778, impelled by the desire of hearing once more the applause of multitudes, he went up to Paris, where he was hailed by all classes with boundless enthusiasm. But the sudden change in his manner of life was too great a strain on his strength and he soon collapsed. He was buried at the Abbey of Scellières, between Nogent and Troyes, of which his nephew, the Abbé Mignot, was commendator. At the revolution his remains were transferred to the Panthéon (1791).

During his whole life Voltaire was an indefatigable writer. The long list of his productions embraces works in almost every branch of literature: in poetry, the drama, romance, history, philosophy, criticism and even science. Nearly all his works are strongly animated by a spirit of hostility to the Christian religion and its representatives. This brought him into conflict with the religious element and the gov-

ernment, and a great part of his later years was spent in exile on account of his extreme rabid criticism of religious thought and belief. It was mainly in order to be out of reach of the government that he lived so much at a distance from Paris, on the frontiers of France, whence he could easily make his escape for a while, when he thought it advisable, into Holland or Switzerland. At Cirey and Ferney he could be more outspoken than he had dared to be when he lived chiefly at Paris. From Ferney he issued all his most direct attacks upon Christianity and Catholicism, the 'Sermon des Cinquante,' 'Extrait des Sentiments de Jean Meslier,' 'La Bible enfin Expliquée.' At the same time he was a chief contributor to the 'Encyclopédie,' and indeed its leading spirit. Yet he had no sympathy with the atheistical views that are found expressed in some parts of that work. He upheld theism with as much zeal as he denounced Christianity and priestcraft, and even came to be looked upon as reactionary by the atheistical spirit of the time. It ought to be mentioned also that his hatred of fanaticism, although often the cause of violence and injustice on his part, was the mainspring of some of the most honorable actions of his life, as in the case of the Calas family. See CALAS, JEAN.

The works of Voltaire on which his literary fame is now generally held to rest, are his philosophical novels such as 'Zadig,' 'Candide,' 'L'Ingénu'; his histories ('Siècle de Louis XIV,' 'Histoire de Charles XII'), his correspondence, and more than all, perhaps, his poetical epistles, satires and occasional poems of a light character, in which the typical Frenchman is exhibited in his most complete manifestation, full of wit, gaiety, vivacity, ease and grace. Several of his tragedies, among which may be mentioned 'Zaïre' (usually reckoned his masterpiece in the dramatic art), 'Alzire,' 'Mérope,' 'Mahomet' (translated into German by Goethe), and 'Rome Sauvée,' had great success in their own day, but the French do not assign to them a high place in their literature. Voltaire attempted comedy also, but in this he was still less successful. He seems to have been deficient in a sense of humor. The best of his comedies is 'L'Enfant Prodigue.' We should not omit to mention that Voltaire was always a great lover of the drama, and that wherever he settled for any length of time one of his first aims was to get a theatre established in the place, sometimes in his own house. Occasionally he acted himself. The 'Henriade,' an epic poem, with Henry IV of France as hero, is another work of his, which, though not highly esteemed now, had great success, and exercised a powerful influence when it first appeared. (See CANDIDE). Of the numerous editions of the works of Voltaire, the best are those of Beaumarchais, with introductions and notes by Condorcet (1784–90), Beuchot (1828 et seq.), and Moland (1877–85). The chief biographies are those by Desnoiresterres, 'Voltaire et la Société Française au XVIII Siècle' (2d ed. 1887); Mahrenholtz, 'Voltaires Leben und Werke' (1885); Parton, 'Life of Voltaire' (1881); Hamley, 'Voltaire' (1877); Ballantyne, 'Voltaire's Visit to England' (1893); and Espinasse, 'Voltaire' (1892). Consult also Strauss, D., 'Voltaire: Sechs Vorträge' (1870); Morley, John, 'Voltaire' (1872); Maugras, 'Voltaire et Jean Jacques Rousseau' (1886); Rabaud, 'Etudes Historiques sur l'Avènement de la Tolérance' (1892); Campardon, 'Documents Inédits sur Voltaire' (1893); Deschanel, 'Le Théâtre de Voltaire' (1886); Lion, 'Les Tragedies et les Théories Dramatiques de Voltaire' (1896); Lounsbury, 'Shakespeare and Voltaire' (1902); Calmettes, 'Choiseul et Voltaire' (1902); Price, W. R., 'Symbolism of Voltaire's Novels' (New York 1911); Tallentyre, G. S., 'Voltaire in his Letters' (New York 1919).

VOLTAISM, a term early applied to galvanism, from the fact that Volta's explanations of Galvani's experiments on frogs led to the correct appreciation of the sources of the electricity generated.

VOLTAMETER. See COULOMETER.

VOLTERRA, vŏl-tĕr'rä, **Daniele da** (RICCIARELLI, DANIELE) Italian painter: b. Volterra, Italy, 1509; d. Rome, 4 April 1566. He studied painting at Siena, and afterward went to Rome, where he gained the friendship of Michelangelo, who not only instructed him, but gave him designs for some of his works. His fame rests chiefly on a series of frescoes in the Church of La Trinita de' Monti, Rome; and of those of the 'Descent from the Cross' is well known by Toschi's engraving. He was employed by Paul IV to drape the figures in Michelangelo's 'Last Judgment' and thus earned for himself the soubriquet of "Il Braghettone" (The Breechesmaker). In the latter part of his life he applied himself also to sculpture.

VOLTERRA, Italy, town situated in the province of Pisa, on a table-land about 1,600 feet above sea-level; 51 miles by rail east-southeast of Leghorn. It is surrounded by cyclopean walls, in better preservation than any other structures of the kind in Italy. The gate called *l'Arco,* and the remains of baths and of an amphitheatre, are interesting vestiges of antiquity; the cathedral, municipal palace and *Pretorio* are monuments of the Middle Ages; and the *Mastio,* a prison, is a modern edifice. Volterra contains a college, numerous schools and a library of 120,000 volumes. Wine, oil, corn and mulberry-trees are grown in the lands belonging to the town, which also possesses considerable mineral wealth. Pop. 16,784.

Volterra, anc. *Volaterræ,* was one of the most powerful and important of the Etruscan cities and came into the possession of Rome 474 B.C.; after the fall of the empire it suffered much from the invasion of barbarians.

VOLTURNO, vŏl-toor'nō, Italy, a river which rises in the province of Campobasso, flows southeast to its junction with the Calore, and then west past Capua into the Mediterranean, 20 miles southeast of Gaeta, after a course of 112 miles. Garibaldi won a victory over the army of the king of Naples on its banks in 1860.

VOLUME, the bulk occupied by a body; the amount of space a thing occupies, as the volume of water in a pond, or of air in a room. The volume of a body may be "real" or "apparent"; the real volume being the space occupied by the actual substance of which the body is composed, after making allowance for the pores or interstices that may be present; while the apparent volume is the space included

within an imaginary surface which just takes in the body, interstices and all. The "apparent volume" of a heap of coal, for example, includes the "real volume" of each separate fragment of the coal, and also the empty spaces between these fragments, as they lie in the pile. See MENSURATION; WEIGHTS AND MEASURES; METRIC SYSTEM; UNITS.

VOLUMETRIC ANALYSIS, *in chemistry,* analysis consisting in submitting the substance to be estimated to certain characteristic reactions — the chemist employing for such reactions liquids of known strength, and, from the quantity of liquid employed to induce the reaction, determining the weight of the substance to be estimated by means of the laws of equivalence. The idea of this method suggested itself first to Gay-Lussac in considering how most readily to determine the amount of silver in an alloy of silver and copper; but the method itself did not come into general use till a considerable time afterward. The liquid reagents of known strength are called *standard solutions;* and the amount employed may be estimated either by weight or by volume, but the latter being the easiest of application, is universally employed — hence the name Volumetric Analysis. In order that a reaction may be applicable in Volumetric Analysis, it must satisfy these two conditions: (1) It must not occupy much time; (2) the termination of the reaction must be easily recognized and unmistakable to the eye. These conditions limit the number of volumetric processes. In addition to the ordinary chemical apparatus, Volumetric Analysis requires graduated glass vessels of different kinds for measurement of the standard solutions. Of these the most essential are: (1) *Pipettes,* glass vessels of the form of Figs. 1 and 2, intended for the delivery of the standard solution: Fig. 1 shows a vessel provided with a single mark upon the neck, while Fig. 2 shows one divided and graduated through its whole length into cubic centimetres (c.c.), according to French scale; (2) *flasks* graduated for the contents in various sizes from one-tenth of a litre to five litres, and used for preparation of standard solutions; (3) *burettes,* or graduated tubes for measuring liquids used in an analysis. The best burette for general purposes is known as Mohr's burette (see Fig. 3); and its lower part is attached to an India-rubber tube and spring-clamp or clip (*Quetsch-Hahn*). Its principal advantages over other forms are, that its constant upright position enables the operator at once to read off the number of degrees of standard (or test) solution used for any analysis, while the quantity of fluid to be delivered can be most accurately regulated by the pressure of the thumb and finger on the clamp; moreover, as it is not held in the hand, no error is likely to arise in the measurement from the heat of the operator's hand. Its greatest drawback is that it cannot be used for those test-solutions which decompose India-rubber.

The *standard solutions,* known also as *test* or *titrated solutions* (from French *titre,* which signifies the standard of a coin), may be divided into: (1) Such as are immediately prepared by weighing a substance of known composition, dissolving it, and diluting it to the required volume; (2) such as are prepared by approximate mixture and subsequent exact analysis. The greatest care is indispensable regarding both the graduation of the measuring instruments and the strength and purity of the standard solutions, which must be protected from evaporation and other hurtful influences by being kept in bottles of one or two litres capacity, provided with well-ground stoppers.

Volumetric methods are usually classified as follows, according to the principles on which they are based: (1) *Analysis by saturation,* when the quantity of a base or an acid is measured by the quantity of acid or base required for exact saturation — a point to be determined by test-papers, tincture of litmus, etc. (2) *Analysis by oxidation and reduction,* when the quantity of the substance to be determined is found by the quantity of chlorine, bromine, iodine or oxygen to which it is equivalent (regarded as oxidant); or by the quantity of chlorine, bromine, iodine or oxygen which it requires to pass from a lower to a higher stage of oxidation: the chief oxidizing agents are permanganate of potash and bichromate of potash; while the reducing agents chiefly used are protoxide of iron and hyposulphite of soda. (3) *Analysis by precipitation,* when the determination of a

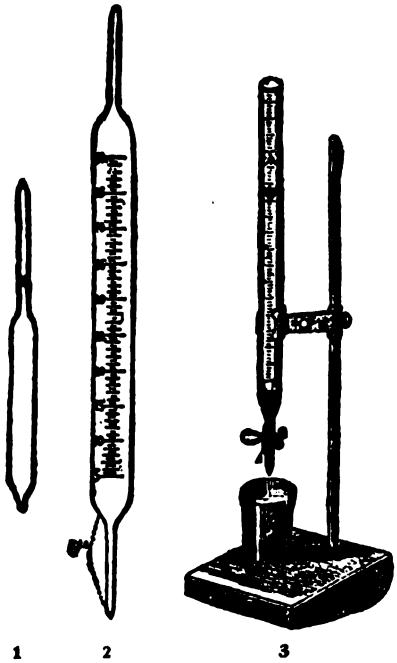

FIG. 1.—A Pipette, containing 10 c.c.
FIG. 2.—A Pipette, containing 50 c.c., divided through its whole length in c.c.; being thus graduated for measuring the delivery of fluids.
FIG. 3.—*a*, the India-rubber; *b*, the slips made of brass wire, by which the India-rubber tube can be closed at will.

substance is effected by precipitating it in some insoluble and definite combination. We have space for an example of only one of these three forms; and, selecting the last for its historic interest in its application to the determination of silver, we give Sutton's account of the process: "Suppose that it is desirable to know the quantity of pure silver contained in a coin. The coin is first dissolved in nitric acid, by which means a

bluish solution containing silver, copper, and probably other metals, is obtained. It is a known fact that chlorine combines with silver in the presence of other metals to form chloride of silver, which is insoluble in nitric acid. The proportions in which the combination takes place are 35.5 of chlorine to every 108 of silver; consequently, if a standard solution of pure chloride of sodium is prepared by dissolving 58.5 grains of the salt — i.e., 1 eq. sodium (= 23) plus 1 eq. chlorine (= 35.5) or 1 eq. chloride of sodium — in so much distilled water as will exactly make up 1,000 grains by measure, every single grain of this solution will combine with 0.0108 of a grain of pure silver to form chloride of silver, which precipitates to the bottom of the vessel in which the mixture is made. In the process of adding the salt solution to the silver, drop by drop, a point is at last reached when the precipitate ceases to form. Here the process must stop. On looking carefully at the graduated vessel from which the standard solution has been used, the operator sees at once the number of grains that have been necessary to produce the complete decomposition. For instance, suppose the quantity used was 520 grains; all that is necessary to be done is to multiply 0.0108 grain by 520, which shows the amount of pure silver present to be 56.16 grains. By volumetric analysis as compared with ordinary analysis, much time, labor and expense are saved; at the loss, however, often of due accuracy, unless the greatest care be taken that the standard solutions are of proper strength, and the instruments accurately graduated. An analysis can thus be completed in 15 minutes that would formerly have occupied a day or more. Independently of its application to pure chemistry, it facilitates to a great extent the chemical analysis of wine, of waters, of manures, soils, etc. Consult Mohr, 'Lehrbuch der Chemischen-Titriermethode'; Rieth, 'Volumetrische Analysis' and other handbooks of analytical chemistry.

VOLUMOMETER, an instrument for determining the specific gravity of a solid by measuring the amount of water or other liquid displaced by it. A simple form is a flask having a long narrow neck, and an opening at the side through which the solid may be introduced. The neck is graduated from the bottom upward. In using, the flask is filled to the zero mark with a fluid; on turning it on its side the stopper can be removed and the solid introduced; when turned back to an upright position the liquid is forced up the stem and the volume reading is the amount of liquid displaced by the solid. From this the specific gravity can be easily calculated.

VOLUNTARY CONTROVERSY, a controversy begun in Scotland in 1780, and which continued obscurely until 1831, when it began to excite general interest, resulting at length in disruption of the Scottish Presbyterian Church, and to that remarkable action, by which, as a protest against state interference, on Tuesday, 23 May 1843, 396 ministers and professors renounced all claim to the benefices they had held in connection with the Establishment, declaring them to be vacant and consenting that they should be dealt with as such. By this memorable act of self-sacrifice in obedience to principle these ministers and teachers gave up an annual income amounting to at least $500,000. See FREE CHURCH.

VOLUNTARY CONVEYANCE, *in law,* transfer of property, real or personal, without any valuable consideration. Voluntary conveyance comes into question mostly in cases of bankruptcy, when a debtor's estate is insufficient to meet the claims of creditors. The first English statutes regarding voluntary conveyance were 13 Elizabeth, ch. 5, for protection of creditors, and 27 Elizabeth, ch. 4, for protection of subsequent purchasers: the law as determined in Elizabeth's time is accepted generally throughout the United States even where it has not been re-enacted in statutes. At one time a voluntary conveyance made when the maker of it was a debtor, even if he possessed many times the amount of the debt, was held fraudulent within the intent of 13 Elizabeth, ch. 5; but now the proportion of the debt to the whole estate is taken into account and voluntary conveyance is not regarded as *prima facie* fraudulent unless the property conveyed constitutes a large ratio of the debtor's estate.

VOLUNTARYISM, or THE VOLUNTARY SYSTEM, a term applied to the support of ministers of religion and their churches by the voluntary contributions of the people, as opposed to the connection of church and state, and the support of the ministry from tithes or general taxation. Whenever the clergy receive stipends from the state, it is evident that the taxpayer, in addition to the voluntary support, if any, which he gives to some particular church contributes through taxation to the support of an established church or of state-recognized churches in general.

In ancient times state and church were inseparable, and opposition to the church was regarded as treason to the state. This relation existed throughout the Middle Ages, and until a comparatively recent period, under the papacy, with the important difference that the state was regarded and treated as subordinate to the church, and as bound to obey its decrees. In the countries which accepted the Protestant doctrines in one form or another the relations of church and state were reversed, and the state, as represented by the sovereign, assumed control of the church, a fact which had much to do with the spread of the Reformation. While the conditions of the connection were changed, however, the tie between church and state became, in Protestant countries, even stronger than before, an ever-present and jealous monarch uniting in his own person the hereditary civil power of the Crown, and the religious authority which had formerly been exercised by a distant pope. Dissentees from the established church became rebels, whereas before they had only been heretics, and the devastating civil wars of the 16th and 17th centuries were the outcome, in a large, if not a principal degree, of this new relation.

The dissentee from a church establishment did not seek to put a voluntary system in its place. If he triumphed in England or immigrated to America his aim was to create an established church of his own, and doom to stake or scaffold any intruder who disagreed with him. The colonies of Rhode Island and Maryland, the former founded by Protestants,

the latter by Roman Catholics, were framed on the plan, then novel to the world, of toleration in matters of conscience, accompanied by its correlate, the voluntary system.

While the world has made admirable progress toward complete liberty of conscience, while the prison and scaffold no longer menace dissenters from an established creed, and men can be friends, and acknowledge each other's good qualities although differing pole-wide — to use Whittier's expression — in religious opinions, the voluntary system is still almost confined to the United States, Mexico and the leading British colonies. State-supported churches are the rule, even in France and Germany, where all creeds are on an equal footing, in Switzerland, where absolute liberty of conscience is decreed by law, the magistrates keep a certain degree of supervision over religion, and Brazil, while providing in her Constitution for absolute separation of Church and State, still supports the ecclesiastics who were in receipt of state support when the new relation came into force.

In the United States, saving the fact that church property is usually exempt from taxation, the voluntary system prevails everywhere, and only chaplains in the army and navy, and those who say prayers before public bodies, as at the opening of the United States Senate, receive pay from the public treasury. This universal voluntaryism did not come about with independence, or even with the adoption of the Federal Constitution. The first amendment to the Constitution of the United States provided that Congress should make no law respecting an establishment of religion, or prohibiting the free exercise thereof. This, of course, did not affect the power of the several States to create or continue church establishments. The convention which framed a constitution for Massachusetts provided in the "Bill of Rights," that "the legislature shall authorize and require the several towns, parishes and precincts to make suitable provision at their own expense for the institution of the public worship of God, and the support and maintenance of public Protestant teachers of piety, religion and morality, in all cases where such provision shall not be made voluntarily." Officers known as tithingmen were appointed to collect the dues, and if a taxpayer defaulted, distress and even imprisonment followed. This system amounted to State support of the Congregational Church, and it was not until 1815 that dissenters from the prevailing creed were released from paying taxes to maintain the ministers of the majority. The involuntary system was abolished altogether in Massachusetts in 1833. In Connecticut the constitution of 1818, while giving every society of Christians, power to tax the members of such society, permitted any member to escape this obligation by giving notice of withdrawal in writing. And now, as for many years past, without any provision of the Federal Constitution to coerce the States, and by force of enlightened public opinion, voluntaryism in the maintenance of ministers and churches prevails everywhere throughout the republic, and in no country in the world is religion better supported, while the clergy also, conscious of their freedom from State control, are self-respecting in their personal attitude, and devoted to the service of God and of their flocks.

VOLUNTEER STATE. A name given to the State of Tennessee.

VOLUNTEERS. Persons who enter military service of their own free will and not by constraint or compulsion. In the United States, especially during the Civil War, volunteers included solders of all bodies other than the regular army, but practically governed by the same laws when in service. In general the army of volunteers comprises to all intents and purposes, (1) the regular unpaid forces of the State militia which when called into actual service receive pay from the government and are subject to the rules and articles of war, and (2) that class of troops which may from time to time be raised by Congress on occasions of national emergency. In the United States, by act of Congress, in 1914 the volunteer forces are raised, organized and maintained only during the existence of war, or while war is imminent, and only after Congress shall have authorized the President to raise such a force. The term of enlistment in the volunteer forces is the same as that for the regular army, exclusive of reserve periods, and all officers and enlisted men composing such volunteer forces are mustered out of the service of the United States as soon as practicable after the President shall have issued a proclamation announcing the termination of the war or the passing of the imminence thereof. When volunteer forces are to be raised the President issues his proclamation, stating the number of men desired for each arm, corps and department, within such limits as may be fixed by law, and he prescribes such rules and regulations as may be necessary for the purpose of examining, organizing and receiving into the service, the men called for. The power to organize volunteer forces includes the power to provide, within such limits as are or may be prescribed by law, the officers and enlisted men of all grades and classes, and the trained nurses, male and female, that may be necessary in the various arms, corps and departments. When three-fourths of the prescribed minimum enlisted strength of any company, troop or battery, or when three-fourths of the prescribed minimum enlisted strength of each company, troop or battery comprised in any battalion or regiment of the organized land militia of any State, Territory or the District of Columbia, organized as prescribed by law and War Department regulations, volunteer and are accepted for service in the volunteer army as such company, troop, battery, battalion or regiment, such organization may be received into the volunteer forces in advance of other organizations of the same arm or class from the same State, Territory or District, and the officers in the organized land militia service with such organization may then, within the limits prescribed by law, be appointed by the President, by and with the advice and consent of the Senate, as officers of corresponding grades in the volunteer army and be assigned to the same grades in the said organization or elsewhere as the President may direct. All enlisted men received into the service in the volunteer forces, as far as practicable, are taken from

the several States and Territories and the District of Columbia in proportion to the respective populations thereof. When the raising of a volunteer force has been authorized by Congress and after the organized land militia of any arm or class has been called into the military service of the United States, volunteers of that particular arm or class may be raised and accepted into said service regardless of the extent to which other arms or classes of said militia have been called into said service. The volunteer forces are subject to the laws, orders and regulations governing the regular army in so far as such laws, orders and regulations are applicable to officers or enlisted men whose permanent retention in the military service, either on the active list or on the retired list, is not contemplated by existing law, and no distinction is made between the regular army, the organized militia while in the military service of the United States, and the volunteer forces in respect to promotion or to the conferring upon officers or enlisted men of brevet rank, medals of honor, certificates of merit or other rewards for distinguished service, nor in respect to the eligibility of any officer of said army, militia or volunteer forces for service upon any court-martial, court of inquiry or military commission. The organization of all units of the line and of the signal troops of the volunteer forces is the same as that prescribed by law and regulations for the corresponding units of the regular army. When military conditions so require, the President may organize the land forces of the United States into brigades and divisions and such higher units as he may deem necessary, and the composition of units higher than the regiment is as he may prescribe. To each regiment of infantry, cavalry and artillery and to each battalion of engineers and signal corps troops, there is attached the same personnel of the Medical Department as are attached to like organizations of the regular army. The organization of the coast defense, of machine-gun detachments, establishments of the Medical Department, remount depots, military trains, secret-service agencies, military prisons, lines of communication, including their supply depots, and of other adjuncts that may be necessary in the prosecution of war and the organization of which is not otherwise provided for by law, is as the President may from time to time direct.

Except as otherwise provided the President is authorized, by and with the advice and consent of the Senate, to appoint all volunteer officers required, but the number and grade of such officers does not exceed the number and grade of like officers provided for a like force of the regular army. All appointments below the grade of brigadier-general in the line of the volunteer forces are by commission in an arm of the service and not by commission in any particular regiment, and officers in each arm of the service are assigned to organizations of that arm and transferred from one organization to another in that arm, as the interests of the service may require, by orders from the Secretary of War. To provide the staff officers necessary in the various staff corps and departments in time of war or while war is imminent, and that are not otherwise provided for, the President is authorized to appoint, by and with the advice and consent of the Senate, such number of volunteer staff officers of grades authorized by law for the regular army as he may find necessary for such corps and departments. The total number of such staff officers so appointed, including all such officers of the organized militia called into the military service of the United States, does not exceed the ratio of one officer to 200 enlisted men for all militia and volunteer forces called into the military service of the United States. The number of volunteer staff officers appointed in any grade in the various staff corps and departments does not exceed in any staff corps or department the proportionate strength of regular officers of the corresponding grade as established by law for the corresponding staff corps or department of the regular army. The President may appoint, by and with the advice and consent of the Senate, volunteer chaplains at the rate of one for each regiment of volunteer infantry, cavalry and field artillery, and one for every 12 companies of volunteer coast artillery raised, with rank corresponding to that established by law for chaplains in the regular army.

In appointing the volunteer officers the President may select them from the regular army, from those duly qualified and registered pursuant to section 23 of the Act of Congress, approved 21 Jan. 1903, from the country at large, from the organized land militia of the District of Columbia and, upon the recommendation of the various governors, from the organized land militia of the several States and Territories in proportion, as far as practicable, to their respective populations, and, as far as compatible with the interests of the military service, from the localities from which the troops with which the officers appointed upon said recommendation are to serve have been recruited. In appointments from the country at large preference is given those who shall have had honorable service in the regular army, the national guard or the volunteer forces, or who have been graduated from educational institutions in which military instruction is compulsory. At the same time, not to exceed one regular army officer may hold a volunteer commission in any one battalion of volunteer engineers or signal troops, or in any one battalion of volunteer field artillery, and not to exceed four regular army officers may, at the same time, hold commissions in any one regiment of volunteer cavalry, field artillery or infantry, or in any 12 companies of coast artillery, including their field and staff. Regular army officers appointed as officers of volunteers do not thereby vacate their regular army commissions nor are they prejudiced in their relative or lineal standing therein by reason of their service under their volunteer commissions. The temporary vacancies created in any grade not above that of colonel among the commissioned personnel of any arm, staff corps or department of the regular army, through appointments of officers thereof to higher volunteer rank, are filled by temporary promotions, according to seniority in rank of officers holding commissions in the next lower grade in said arm, staff corps or department, and all temporary vacancies created in any grade by temporary promotions are in like manner filled from, and thus create temporary vacancies in,

the next lower grade, and the vacancies that remain thereafter in said arm, staff corps or department, that cannot be filled by temporary promotions, may be filled by the temporary appointment of officers of such number and grade or grades as maintain said arm, corps or department at the full commissioned strength authorized by law. In the staff corps and departments subject to the provisions of sections 26 and 27 of the Act of Congress, approved 2 Feb. 1901, and acts amendatory thereof, temporary vacancies that cannot be filled by temporary promotions are filled by temporary details made in the manner prescribed in said sections 26 and 27 and acts amendatory thereof, and the resulting temporary vacancies in the branches of the army from which the details are so made are filled as hereinbefore in this section prescribed. Officers temporarily promoted or appointed under the terms of this section are so promoted or appointed by the President, by and with the advice and consent of the Senate, for terms that do not extend beyond the termination of the war or, if war shall not occur, beyond the passing of the imminence thereof, as defined by the President's proclamation, and upon the expiration of said terms said officers are discharged from the positions held by them under their temporary promotions or appointments. Officers temporarily promoted under the provisions of this section do not vacate their permanent commissions, nor are they prejudiced in their lineal or relative standing in the regular army under permanent commissions, by reason of their services under temporary commissions.

All returns and muster-rolls of organizations of the volunteer forces and of militia organizations while in the service of the United States are rendered to the adjutant-general of the army, and upon the muster out of such organizations the records pertaining to them are transferred to and filed in the adjutant-general's office. Out-regimental and out-medical officers serving with volunteer troops or with militia organizations in the service of the United States, in the field or elsewhere, keep a daily record of all soldiers reported sick or wounded, as shown by the morning calls or reports, and deposit such reports, with other reports, in the adjutant-general's office.

In time of war or while war is imminent all organizations of the land forces in the military service of the United States are recruited and maintained as near their prescribed strength as practicable. For this purpose the necessary rendezvous and depots are established by the Secretary of War for the enlistment and training of all recruits, and in order that officers may be available for recruiting duty the President is authorized, by and with the advice and consent of the Senate, to appoint officers of volunteers of the proper arm of the service, in numbers not to exceed at the rate of one major, four captains, five first lieutenants and five second lieutenants for each organized regiment of cavalry, field artillery or infantry, each three battalions of engineers or each 12 companies of coast artillery; for purposes of instruction and discipline, troops at recruit depots may be organized into companies and battalions, at the discretion of the Secretary of War, with non-commissioned officers and privates of such grades and numbers as may be prescribed by the President. The recruit rendezvous and recruit depots are under the direct control of the Secretary of War and render their reports and returns to the adjutant-general of the army. To maintain the organized land militia organizations in the military service of the United States at their maximum strength the recruiting rendezvous and depots in any State or Territory may, at the request of the governor thereof, enlist and train recruits for the organized land militia organizations in the service of the United States from said State or Territory. In the organization of a recruiting system, after Congress shall have authorized the raising of volunteer forces, the President is authorized to employ retired officers, non-commissioned officers and privates of the regular army, either with their rank on the retired list or, in the case of enlisted men, with increased non-commissioned rank, or he may, by and with the advice and consent of the Senate, appoint and employ retired officers below the grade of colonel, with increased volunteer commissioned rank, not to exceed in the case of any officer one grade above that held by him upon the retired list, or retired enlisted men with volunteer commissioned rank not above grade of first lieutenant. Retired officers and enlisted men while thus employed are not eligible for transfer to the field units, but receive the full pay and allowances of the respective grades in which they are serving, whether volunteer or regular, in lieu of their retired pay and allowances. Upon the termination of the duty or, in case of those given volunteer rank, upon muster out as volunteers said retired officers and enlisted men revert to their retired status.

Except as otherwise specifically prescribed by law, all officers are subject to such assignments of duty and such transfers as the President may direct. Medical officers of volunteers when detailed as consulting surgeons do not exercise command over the hospitals to which they may be assigned for duty, except by virtue of their commissions they may command all enlisted men. Medical inspectors are detailed for duty with each army, field army or army corps and division, and for the base and lines of communications, and no officer is detailed for duty as a medical inspector except he be experienced in military sanitation. All officers and enlisted men of the volunteer forces are in all respects on the same footing as to pay, allowances and pensions as officers and enlisted men of corresponding grades in the regular army.

In accordance with a proper military policy for the United States as prepared by the War College Division, general staff corps in addition to any forces that may be maintained and trained in time of peace, provision must be made for vastly increasing such forces in time of war. These must come from the untrained body of citizens and provision for raising them is contained in the Act of Congress approved 25 April 1914. This act meets the military needs for raising volunteer troops as far as concerns the enlisted personnel, except in two particulars: first, that under the existing laws certain organizations of the militia, with numbers far below the full strength, can

enter the volunteer force in advance of other similar volunteer organizations from the same State; and second, no volunteers of any arm or branch can be raised until all the militia of that particular arm or branch have been called into the service of the United States.

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VOLUNTEERS OF AMERICA, The, a religious body organized from former members of the Salvation Army (q.v.) in 1896 by Commander and Mrs. Ballington Booth and consisting of six regiments, embracing nine companies or central societies and nearly 100 self-supporting posts, not including outposts. The chief official is elected by the members as commander-in-chief, and by the directors as president. There are headquarters in New York City and branches in the principal cities of the United States. The minor councils of officials throughout the country are represented by a Grand Field Council. They give an immense number of free lodgings and meals to those out of work, at 57 principal institutions. Their Volunteer Hospital, in New York, has treated in one year 22,000 old and 12,000 new cases. Homes are maintained for friendless young women, and there is a branch for child protection. The Prison League is an important department of volunteer activity. It maintains leagues in 30 States and records over 70 per cent of criminals returned to honest living. There is an aggregate annual attendance of 1,000,000 persons at the hall meetings and 2,000,000 at the open-air meetings.

VOLUSENUS, Florentius. See WILSON, FLORENCE.

VOLUTE, a spiral scroll used in Ionic, Corinthian and Composite capitals, of which it is a principal ornament. The number of volutes in the Ionic order is four. In the Corinthian and Composite orders they are more numerous, in the former being accompanied by smaller ones, called helices. See ARCHITECTURE.

VOLUTE WHEEL, a volute-shaped wheel that in rotating presents its open mouth to the air, which is thus gathered into the tube and discharged through the hollow axis. It is a common and effective sort of blower. Also, a water-wheel with radial or curved buckets, in which the periphery of the wheel is surrounded by a volute-shaped casing or scroll.

VOLVOX, a minute aquatic plant (*Volvox globator*), in the form of a pale green globule floating about in the water. Under the microscope it is seen to be a spherical membraneous sac, studded with innumerable green points giving exit to cilia, which enable it to roll over and over in the water. Within the sac are various dense globules, generally green in summer, but often of an orange color in autumn and early winter. They are zoospore-like bodies, each sending a pair of cilia through separate orifices. There is a reddish-brown spot and a contractile vacuole.

VOLVULUS, vŏl'vū-lŭs (Latin *volvo,* I roll or twist): in *medicine,* term denoting a twisting of the intestine, producing obstruction to the passage of its contents. A disorder of a different kind, but with similar symptoms and often similar results, is Intussusception (q.v.). There are three distinct varieties of rotatory movement capable of giving rise to volvulus—(1) A portion of intestine may have become twisted on its own axis, and in that case even semi-rotation brings the intestinal walls into contact, so as to close the passage: this is a rare condition, occurring only in the ascending colon. (2) The mesentery (q.v.), or a part of it, may be twisted into a cone, dragging the intestine with it; the mesentery being the axis, and the intestine being rolled up on it; this form occurs in the small intestine. (3) a single portion or a coil of intestine may afford the axis round which another portion with its mesentery is thrown, so as to compress it, and close the passage. A coil of small intestine, the sigmoid flexure or the cæcum (see DIGESTION), may form the axis. All these varieties occur chiefly in advanced life, and their seat is commonly toward the posterior unyielding wall of the abdominal cavity, the smoothness and yielding nature of the parts anteriorly rendering such an event almost impossible. The symptoms of twisting of the intestine, especially of the sigmoid flexure, the most common seat of the affection, are usually distinctly marked from the beginning. Great pain is suddenly experienced in a small circumscribed spot of the abdomen, obstinate constipation usually setting in from that date. If the sigmoid flexure, which lies just above the rectum, is the seat of the twisting, the abdomen soon becomes distended, especially on the left side, the distention being much more marked than when the twist is in the small intestine, as might physiologically have been expected. Vomiting, often constant and copious, is usually present. These cases are so desperate in their nature that it is needless to enlarge on their treatment. Attempts to remove the displacement by injecting water or air into the intestine through a long tube have often been made, but with slight success. Operations for relief of this and other intestinal obstructions, e.g., intussusception, have until recently been very often fatal; but of late the progress of surgery—especially in connection with antiseptics—has greatly reduced the ratio of fatal results. Intestinal obstructions produced either by Volvulus or by other causes have been successfully treated by surgical means; diseased portions of the intestine (e.g., the appendix vermiformis) have been cut out and the separated parts reunited by sewing (enterorrhaphia). In the treatment a few rules are universally applicable, viz., wherever symptoms such as above described occur, aperients should be given only by the rectum, while opium should be freely given by the mouth. Leeches and hot fomentations should be applied to the seat of pain, and all solid food should be prohibited, the nourishment being given solely in fluid form.

VOMER, one of the bones of the skull. See HEAD; SKULL.

VOMITING, the ejection of the stomach's contents through the mouth, mainly by spasmodic contraction of the abdominal muscles, assisted by the active co-operation of the muscular walls of the stomach; the diaphragm remains fixed, affording a firm surface against which the stomach is pressed by the abdominal muscles. Relaxation of the sphincter at the cardiac orifice of the stomach is necessary, as its contraction will resist the power of all the

expulsor muscles combined, explaining the violent and vain efforts to vomit, often seen and experienced; the act is preceded by a deep inspiration, the glottis being spasmodically closed during the paroxysm. It may be produced by irritating substances applied to the mucous membrane of the stomach, the impression being conveyed by the pneumo-gastric nerves and the motor nerves of expiration, as after taking common emetics; by irritation in other parts of the body, transmitted by reflex nervous action, as in strangulated hernia, the passage of calculi and during gestation; and by impressions received through the sensorial centres, whether emotional or sensational, as from tickling the fauces, disgusting sights or odors and in seasickness; even the recollection of these sensations may cause vomiting in very impressionable persons. It is a common symptom of many diseases of the stomach and intestines, and arises from sympathy in affections of many other organs; it is sometimes nervous or spasmodic. Exclusive of the treatment proper for the special disease of which it may be the symptom, effective remedies for vomiting are ice, effervescing potions, mercurials, prussic acid and various narcotics, creosote, chloroform and ether. In many birds and some mammals, the contents of the stomach are ejected as a means of offense, as in the petrels and vultures, and the llama. Vomiting is usually more easily induced in children than in adults. It is a frequent accompaniment of pregnancy (see OBSTETRICS), and is often prominent in disease of the kidneys (q.v.), tuberculosis (q.v.), etc. Vomiting is in many cases entirely salutary, and in such cases is to be encouraged and assisted. By concentrating on the desired object many persons are able to vomit at will and thus rid themselves quickly of fermenting food that has failed to digest in the normal manner.

VON DROSTE-HÜLSHOFF, drōzt'-hül'-shŏf, **Annette Elisabeth,** German poetess: b. Münster, Westphalia, 10 Jan. 1797; d. Meersburg on Lake Constance, 24 May 1848. She enjoyed the advantage of association and friendship with many noted men of letters, exhibiting always a decided distaste for so-called feminine occupations and devoting herself altogether to intellectual pursuits, especially such as gave stimulus to her lively imagination. Thus while still a young girl she contributed to the Kinder- und Hausmärchen of the brothers Grimm. Her formal education, too, was carried further than was usual for a girl of her day. A devout Catholic, her collection of religious lyrics 'Das geistliche Jahr,' of which the first half was written in 1820 and the second in 1839, makes a universal appeal and belongs to the finest religious poetry of the 19th century. In 1825 she made her first journey to Cologne and the Rhine country, where she made the acquaintance of A. W. Schlegel, Karl Simrock, and later of Adele Schopenhauer, the sister of the philosopher. In the following year her father died and in 1829 her brother Ferdinand. With the unimportant exception of two trips to the Rhine in 1828 and 1830 and a visit to her sister Jenny, who had married Baron Josef von Lassberg in Switzerland, she lived in quiet seclusion, first in her birthplace, and from 1841 to her death with the Lassbergs in Meersburg on the shores of Lake Constance. Here an old acquaintance with Levin Schücking, 17 years her junior, whom the baron called to Meersburg in 1841 to catalogue his library, deepened into something like an unrequited passion, and in that year she produced an entire volume of lyrics. Since 1814 she had been in delicate health and now began visibly to decline. She died in the year of the revolution, 1848, and is buried in Meersburg. Levin Schücking became her most appreciative biographer. Her best non-religious lyrics are 'Haidebilder,' in which with a delicate appreciation of nature she pictures the lonely moors of her native Westphalia. For her ballads, in which she is even more successful, the gloomy legends of this district are her favorite subjects. She also wrote a number of longer epic poems, among them 'Das Hospiz' and 'Die Schlacht im Loener Bruch.' One of the very best German novellen is 'Die Judenbuche.' The softer notes of sentiment are lacking in almost all of Annette von Droste-Hülshoff's verse, which is pervaded throughout by an earnestness, a chastity and selflessness which frequently borders upon acerbity, even in form and diction. She is generally regarded as Germany's greatest woman-poet. A few selected titles from a large bibliography are the following: 'Collected Works,' edited by Levin Schücking (3 vols., Stuttgart 1879); id., by Elizabeth von Droste-Hülshoff (Paderborn 1884-87), with a biography by W. Kreiten; 'Letters of Annette von Droste-Hülshoff and Levin Schücking,' edited by Theo Schücking (Leipzig 1893); Schücking, Levin, 'Annette von Droste, ein Lebensbild' (Hanover 1862); Busse, Karl, 'Annette von Droste' (1903).

WILHELM ALFRED BRAUN.

VON EMMICH, ĕm'ĭch, **Otto,** German army officer: b. Minden, Westphalia, 1848; d. 1915. He became a lieutenant (1868), took part in the campaign of 1871, was promoted to colonel (1897) and became commander of an infantry brigade (1901). He was raised to the rank of general of infantry (1909) and during the early days of the World War commanded the German army of the Meuse and laid siege to Liége. Afterward he won distinction in the Galician campaign and in East Prussia. In 1913 he was elevated to the nobility.

VON HOLST, fŏn hōlst, **Hermann Eduard.** See HOLST, HERMANN EDUARD.

VON MANNLICHER, fŏn măn'lĭH-ĕr, **Ferdinand.** See MANNLICHER, FERDINAND VON.

VONDEL, vŏn'dĕl, **Joost van den,** Dutch dramatic poet: b. Cologne, 17 Nov. 1587; d. Amsterdam, 5 Feb. 1679. His parents, who were Anabaptists, removed to Holland while he was a child, and the poet afterward adopted the Arminian faith, but finally died in the bosom of the Roman Catholic Church. Nature had endowed him with extraordinary talents, and he derived little aid from education. Devoting himself entirely to the cultivation of Dutch poetry, Vondel first learned Latin and French in the 30th year of his age. His works display genius and elevated imagination, and embrace lyric and didactic poems, satires, an epic and some 30 tragedies, some of which are founded on Biblical subjects and bear such titles as 'Lucifer,' 'Noah,' 'Jephtha,' etc. These enjoy a high reputation in Holland, and the interspersed choruses may be regarded as the finest

lyrical productions of the Dutch muse. The best collective editions of his works are those by Jan van Lennep (1850–69) and Unger (1890 onward). The dramatic poem 'Lucifer' (1654) is his greatest work and by some critics is supposed to be the source of the inspiration of Milton's 'Paradise Lost,' but this may reasonably be doubted. English translations of Vondel's 'Lucifer' (1898); 'Samson' (1903); and 'Adam' (1903) have been made by C. Van Noppen. Consult 'Lives' by Baumgartner (1882); Haek (1890); Looten, 'Etude littéraire sur Vondel' (1889); Müller, 'Ueber Miltons Abhängigkeit' (1891).

VONNOH, vŏn'nō, **Bessie Potter,** American artist: b. Saint Louis, Mo., 17 Aug. 1872. She studied in Italy and Paris and was awarded medals at the Paris Exposition (1900) and the Saint Louis Exposition (1904) and at San Francisco. Among her works is 'The Young Mother' (Metropolitan Museum, New York). She is an associate of the National Academy. She is represented in the Metropolitan Museum of Art, the Chicago Art Institute, the Corcoran Art Gallery at Washington and the Brooklyn Museum. Besides the picture which hangs in the Metropolitan Museum she has produced 'Mother and Child' (1905); 'A Modern Madonna' (1905); 'Beatrice' (1906) and others.

VONNOH, Robert William, American artist: b. Hartford, Conn., 17 Sept. 1858. He studied at the Massachusetts Normal Art School, Boston, 1875–79; was instructor there in painting and drawing, 1879–81; in 1881–83, and again from 1886 to 1891, studied in Paris, teaching in the interval at the Museum of Fine Arts, Boston. He acquired a manner in which realism and impressionism are emphasized by dramatic effects and boldness of treatment in light, color, etc. Whether in portrait, figure or landscape painting, his work has individuality and interest, and his success particularly as a portrait-painter has been marked. From 1891 to 1896 he was principal instructor in portrait and figure painting at the Pennsylvania Academy of the Fine Arts. He has exhibited much in this country and in Europe. Among his works are 'Sad News'; 'Miss Mildred Blair'; 'Little Louise.'

VOODOO. See Voudoo.

VOORHEES, voor'ēz, **Daniel Wolsey,** American legislator: b. Liberty, Ohio, 26 Sept. 1827; d. Washington, D. C., 10 April 1897. He was graduated from Indiana Asbury (now De Pauw) University in 1849, admitted to the bar in 1851 and engaged in law practice at Covington, Ind. In 1858–61 he was United States district attorney for Indiana, and he was attorney for the defense of John E. Cook during the latter's trial for participation in John Brown's raid. He was member of Congress in 1861–66 and in 1869–71, and from 1877 to a few months before his death, United States senator from Indiana. He was a member of the Finance Committee throughout his entire career in the Senate, and an advocate of free and unlimited coinage of silver until 1893 when he cast his vote to repeal the silver-purchase clause of the Sherman Act. He was largely instrumental in securing the erection of the Congressional Library building, and was noted as an orator.

VOORHEES, Edward Burnett, American agricultural chemist: b. Mine Brook, N. J., 22 June 1856; d. 1911. He was educated at Rutgers College and became director of the New Jersey Agricultural Experiment Station in 1893 and served as president of the State Board of Agriculture (1902) and the New Jersey Conservation Commission (1909). He headed the association of agricultural chemists in 1894. He was the author of various valuable papers and received the Nichols research medal in 1902. His publications include 'First Principles of Agriculture' (1896); 'Fertilizers' (1898; 9th ed., 1907); 'Forage Crops' (1907; 2d ed., 1911).

VOORHEES, Philip Falkerson, American naval officer: b. New Brunswick, N. J., 1792; d. Annapolis, Md., 26 Feb. 1862. He was appointed midshipman in the navy in 1809, served in the War of 1812, participated in the capture of the *Macedonian* and the *Epervier,* and received a Congressional medal of honor for his services. He attained rank as captain in 1838 and was assigned to command the *Congress,* in which capacity he captured, in 1844, an Argentine squadron and an allied cruiser which had fired on an American ship. His action was commended in home and foreign diplomatic circles, but he was tried by court-martial. His course was vindicated, and in 1847 he was assigned to command the East Indian squadron, a position equal to the rank of rear-admiral, which had not then been established in the United States navy.

VOORSANGER, foor'sāng'ĕr, **Jacob,** American rabbi and educator: b. Amsterdam, Holland, 13 Nov. 1852. Taught at the theological seminary of his native city, he came to the United States about 1870, and was rabbi at Philadelphia (1873–76), Washington, D. C. (1876–77), Providence, R. I. (1877–78), and Houston, Tex. (1878–86). Since 1886 he has been rabbi of Temple Emanu El, San Francisco, Cal. He edited *The Sabbath Visitor* for three years, besides making numerous contributions to leading Jewish weeklies. In 1884 he was elected professor of Semitic languages at the University of California. He has written 'Moses Mendelssohn, Life and Works'; 'Chronicles of Emanu El.' He founded in 1895 a weekly, *Emanu El.*

VOPADEVA, vo-pa-dā'va, celebrated grammarian of India; whose date, given by some as the 12th century, is, according to Burnouf's investigation, the second half of the 13th century. He wrote a grammar entitled 'Mugdhabodha,' held in high repute, especially in Bengal; it was commented on by Durgadâsa (text and commentary edition at Calcutta 1861). It differs from the great work of Pânini in arrangement and terminology, and is of far less value, though very serviceable in giving many later Sanskrit formations. Vopadeva composed other works; and a general though doubtful tradition makes him author of the 'Bhágavata-Purâna.'

VORARLBERG, fōr-ârl'bĕrg (the land in front of Arlberg, a mountain in the Algau Alpine system): district administratively united with the Tyrol, but retaining part of its ancient autonomic institutions; bounded east by Tyrol, south by the Swiss canton Graubünden, west by the principality of Liechtenstein and the canton of Saint Gall, north by Bavaria, 1,005

square miles. Where the land approaches the Lake of Constance and the Rhine and in the valley of the Ill, the country is a fertile plain; the rest is alpine. About one-third of the surface is forest (Bregenzer Wald). Cattle and timber are the chief products. The manufacture of cotton fabrics is a considerable industry in Vorarlberg, employing 180,000 spindles and 4,000 power-looms; a home industry for the women is the manufacture of embroidery for insertions, edgings, etc. Bregenz, the capital, is a centre for manufacture of wooden-wares. Vorarlberg has, as a reminiscence of its ancient condition as an independent state, its own assembly or Landtag, consisting of 19 members, one representing the chamber of commerce, four the towns and 14 the parishes. Pop. 145,794.

VORONEZH, vō-rō'nĕzh, Russia, (1) The capital of a government of same name, on a height above the Voronezh, near its confluence with the Don, 290 miles south-southeast of Moscow. It consists of a high town, a low town and three extensive suburbs—is well built and has a cathedral, an episcopal palace, town-house, gymnasium, diocesan seminary, arsenal, hospital and poorhouse, manufactures of woolen and linen cloth, soap and vitriol, numerous tanneries, a considerable trade in corn and tallow, and important fairs and markets. Voronezh was founded in 1586 and has interesting associations of Peter the Great, and of the poets Nikitin and Koltsoff. It suffered three disastrous fires in the 18th century, but was rebuilt on each occasion. Pop. about 94,800. (2) The southern government of Voronezh has an area of 25,443 square miles. It is intersected by the Don, which receives the whole of the drainage, partly through its tributaries, the Voronezh and Khoper. The soil is generally fertile, and large crops of grain, tobacco and sugar beets are raised. The breeding of horses and sheep is an important industry. Manufactures are considerable and there is an extensive trade. Pop. about 3,687,000.

VOROSMARTY, vĕ'rĕsh-märt-y, **Michael,** Hungarian poet: b. Nyék, comitat of Stuhlweissenburg, 1 Dec. 1800; d. Budapest, 19 Nov. 1855 He studied in Pest, practised for a time as an advocate, in 1848 was a member of the National Assembly and was twice imprisoned for political reasons by the Austrian government. A memorial to him was placed at Stuhlweissenburg in 1866. Among his poems and dramas were 'King Solomon' (1821); 'The Victory of Faithfulness' (1823); 'Zaláns Flight' (1825); 'Cserholom' (1826); 'Erlau' (1828); 'Csongor and Tünde' (1831); 'Banus Marót' (1838). Gyulai prepared a collective edition (1864; 2d ed., 1884) and a biography (1864; 4th ed., 1896).

VORPARLIAMENT. A preliminary gathering of several hundred Liberal leaders who met 31 March 1848 to provide means to call a national German Parliament to deal with the demand for a reorganization of the political system. They decided on an assembly elected directly by the people without distinction as to rank, religion or property to meet at Frankfort to draw up a constitution. There was much disagreement between the monarchial and republican factions and the latter seceded from the meeting and attempted to start an insurrection which was promptly suppressed. After the dissolution of the Vorparliament its work was continued by committees until the national Parliament assembled. See GERMANY—HISTORY.

VORSE, Albert White, American editor: b. Littleton, Mass., 18 Aug. 1866. He was graduated from Harvard in 1889, was connected with the Philadelphia *Press,* 1891–93, the New York *Mail and Express,* 1894–96 and subsequently with the *Illustrated American* and the *Criterion,* 1899–1901. He has published 'The Laughter of the Sphinx' (1900).

VORTEX, a whirlpool or eddy; any fluid rotating around an axis; specifically that portion of a fluid mass that is in a whirl. The name is applied to pools, waterspouts, whirlwinds, and on a larger scale in cyclones and storms generally. Descartes supposed certain vortices to exist in the ether of space endowed with a rapid rotary motion and filling all space, and by these he accounted for the motions of the universe.

VORTEX ATOM, an atom assumed to be a vortex ring in a non-frictional ether. See VORTEX MOTION.

VORTEX MOTION, the motion of a fluid in a closed curve; it is unequal, that is, the fluid does not rotate as a mass. If two vortices of unequal size approach, the smaller floats through the larger one. One of the most striking examples of vortex motion is seen in smoke rings emitted occasionally by locomotives and other high pressure steam-engines when exhausting slowly. Similar and more definite rings are easily produced also by devices now common in physical laboratories. Helmholtz, who was the first to investigate the theory of vortex motion, showed that vortex rings and filaments, or combinations thereof, in a perfect liquid (which is an ideal frictionless fluid of constant density) are indestructible. Extending this idea to perfect fluids, Lord Kelvin suggested that the atoms and molecules may be vortex rings or filaments, or combinations thereof, in the ether. The motion of a mass of fluid is known if the motion of every infinitesimal portion, or particle, of the mass is known. The motion of a particle is investigated by referring the successive positions it occupies in its journey to a set of three straight lines, or axes, which pass through the same point and are mutually rectangular. With respect to these axes the motion of the particle may assume either one of two characteristic types. It may move without rotation about either of the axes, or it may move with rotation about one or more of the axes. The former type is called irrotational motion, and the latter type is called rotational motion, or vortex motion. The vortex type of motion is by far the more common in nature and manifests itself in an infinite variety of ways. For the theory of vortex motion and references to the literature of the subject, consult Lamb, 'Hydrodynamics.'

VORTEX RING. See VORTEX MOTION.

VORTICELLA, vôr-tĭ-sĕl'ą, type of a family (*Vorticellidæ*) of attached or free forms of peritrichous ciliates (animalculæ), in which the adoral zone of cilia, where seen from above, forms a right spiral (dexiotropic), while a secondary circlet of cilia near the aboral end may be either permanent or transient. The true vor-

ticellids, represented well by the common bell-animalcule, are without a permanent second circle of cilia, and the peristome may be completely included within a peristome fold which contracts sphincter-like about it. The stem is either firm and constant in length, or flexible and capable of being contracted suddenly when it becomes a short close spiral. The individuals also are mounted on a single unbranched stalk or grouped on a common branching stalk in colonial existence. The simplest type of reproduction is longitudinal division, which may result in producing two individuals in a branched stalk, or one of the two may become detached and, propelled by a newly-formed circle of cilia near the basal end, lead a free existence for a time. Soon the free form settles down and develops a stalk. Conjugation has been observed and always takes place between a stalked form and a free-swimming form produced by budding. The bell-animalcule has long been a favorite object of microscopical study from its abundance and easily observed structure and activities. Ehrenberg (1838) made an extensive study of these organisms, and maintained that they possessed the complete organ systems of higher forms. The demonstration of their unicellular nature necessitated the abandonment of this view. The group is rich in number and variety of species. They are found in all sorts of aquatic environments but are exceptionally abundant in some types of polluted streams.

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VORTIGERN, vôr'tĭ-gẽrn, a semi-mythical British king of the 5th century, who, according to Gildas, Bede, Ethelwerd and the 'Old English Chronicle,' invited Hengist (q.v.) and Horsa to assist him against his enemies, the Picts and Scots. Whether invited by Vortigern or not, the newcomers are said to have turned against him and wrested from him the Kentish territory. There is something like unanimity in the chroniclers regarding Vortigern's character. They make him tyrannical and licentious, and of course he came to a violent end in conflict.

VOS, vōs, **Geerhardus,** American Presbyterian theologian: b. Heerenveen, Holland, 14 March 1862. He was educated at the seminary of the Holland Christian Reformed Church at Amsterdam and at Princeton Seminary and was professor of theology in the former institution 1888–94 and since the year last named has held a similar post at Princeton. He has published 'The Mosaic Origin of the Pentateuchal Codes' (1886); 'De Verbondsleer in de Gerefomeede Theologie' (1891); 'The Teaching of Jesus' (1903), etc.

VOS, Maarten de, Flemish painter: b. Antwerp, 1532; d. there, 1603. He studied in Antwerp under his father, Pieter de Vos, and De Vriendt, and at Venice under Tintoretto, established a school of painting in his native city in 1538 and became one of the most popular artists of his day, hundreds of engravings of his paintings and drawings being made. Among his works are 'The Triumph of Christ'; 'Cæsar's Penny'; 'The Marriage at Cana,' in the cathedral at Antwerp; 'Saint Luke Painting the Portrait of the Virgin.' He is sometimes styled "the Elder," in distinction from his son Maarten (b. 1576; d. 1613), also an artist.

VOSE, George Leonard, American civil engineer: b. Augusta, Me., 19 April 1831; d. 1910. He was educated at home and at Salem, Mass., studied at the Lawrence Scientific School at Harvard and began his career as assistant engineer on the Kennebec and Portland Railroad. He was associate editor of the *American Railway Times* in Boston (1859–63), removed to Paris, Me. (1866) where he was engaged in railroad projects, was professor of engineering in Bowdoin College (1872–81) and held a similar chair in the Massachusetts Institute of Technology (1881–86). He was the author of several standard works on professional subjects, notably 'Bridge Disasters in America: The Cause and the Remedy' (1887).

VOSGES, vōzh, a European chain of mountains about 100 miles long, partly on the frontiers of France and Alsace, partly in Alsace, extending from north-northeast to south-southwest, nearly parallel with the Rhine, and forming a continuation of the Jura Mountains, which separate France from Switzerland; the breadth varies from 20 to 45 miles. The highest summit, Ballon-de-Guebwiller (the summits are generally called ballons), has a height of 4,685 feet above the surface of the sea. The existence of this ridge, averaging 3,000 feet in height, forms a natural barrier, and confined the German attacks in the World War to the northern area of France. The Vosges Mountains have a gentle declivity and on the eastern and southern sides are covered with vineyards. Great part of the Vosges is densely wooded, and, besides abounding in game, they possess great mineral wealth, including silver, copper, iron, lead, coal and antimony. They also contain excellent pasturage and the inhabitants breed many cattle. The Ill, Lauter, Moselle, Meurthe, Saar and Saône rise in this chain of mountains.

VOSGES, France, an eastern department bounded on the north by the departments of Meuse and Meurthe, on the east by Alsace, on the south by the departments of Haute-Saône and on the west by Haute-Marne; area, 2,303 square miles; capital, Epinal. The department derives its name from the mountain-chain which bounds it on the east, and sends out ramifications over the greater part of its surface. Its south portion is traversed east to west by the chain of the Faucilles. In the lower grounds, on an elevated but tolerably flat tract, grain, hemp, flax and potatoes are extensively raised. The wine produced is indifferent, but the department has long been famous for its kirschwasser made from the produce of extensive cherry-plantations. The principal rivers are the Meuse, Mouzon, Madon, Moselle, Saône and Meurthe; but none of them are navigable within the department. The minerals include argentiferous lead, copper, iron, antimony, cobalt, marble, millstones, slate, kaolin and fine agates. The chief manufactures are the famous Gérome or Munster cheese, cotton and linen cloth, lace, musical instruments, woodenware, nails, iron, steel and iron ware, paper, leather, pottery and glass. Pop. 433,914.

VOSS, fŏs, **Johann Heinrich,** German poet and translator: b. Sommersdorf, near Waren, Mecklenburg, 20 Feb. 1751; d. Heidelberg, 29 March 1826. He early began to write verses and some of these contributed to the 'Göttingen

Musenalmanach' led to a correspondence with Boie, upon whose invitation he went in 1772 to Göttingen. Here he studied the classical and modern languages and was one of the founders of the Göttinger *Dichterbund*. The editorship of the 'Musenalmanach' was handed over to him by Boie in 1775; in 1778 he was made rector of Otterndorf in Hanover, in 1782 at Eutin. In 1781, after the publication of several treatises, he produced his German 'Odyssey,' a work which has rendered this grand poem national with the Germans (new ed. by Bernays, 1881). This has been called "the most perfect rendering of Homer into a modern tongue." In 1793 appeared his translation of the 'Iliad,' and that of the 'Odyssey,' in a new form, in which, however, it did not please so much as before, the former displaying greater truth and naturalness. He published in 1795 an idyl in the epic form called 'Luise,' printed first in 1783, but now produced with improvements. His translation of the whole of 'Vergil' (1799) was revised for the edition of 1821. In 1805 he went as professor to Heidelberg, where he remained till his death. Voss rendered good service to the study of classical antiquity and threw fresh light upon many subjects. As a translator he exhibited wonderful command of language and great skill in the handling of metres. Among his translations that of Homer's works is undoubtedly the greatest; we may also mention, in addition to his 'Vergil,' his 'Hesiod' (1806); 'Horace' (1806); 'Theocritus, Bion and Moschus' (1808); 'Aristophanes' (1821); 'Tibullus' (1810); 'Propertius' (1830) and selections from 'Ovid' (1798). He also undertook, with his sons, a translation of Shakespeare which was completed in nine volumes in 1829, but this translation cannot stand a comparison with Schlegel's. Consult lives by Paulus (1826); by Herbst (1872–76); Prutz, 'Der Göttinger Dichterbund' (1841).

VOSSIUS, Gerardus Johannes, Dutch classical scholar and theologian: b. near Heidelberg, 1577; d. 17 March 1649. In 1578 the family returned to Holland and settled at Dordrecht, where Vossius went to school. He distinguished himself at the University of Leyden, and at the age of 22 returned to Dordrecht, to become principal of the high school. He was a most assiduous and indefatigable student. While principal of the theological college of Leyden 1614–19, he published a work on Pelagianism, 'Historia Pelagiana,' in which he spoke of the Arminians in an apologetic tone, and thereby brought upon himself the wrath of the Calvinistic Dutch clergy; which caused him to be deprived of his office in the theological college. In 1622 he was appointed professor of rhetoric and chronology, and afterward of Greek, in the University of Leyden. In 1626 he was invited to England; but accepted only a prebend (from Archbishop Laud), in Canterbury Cathedral, of the value of $500 per annum, without being required to live out of Holland. He was also made LL.D. of Oxford. In his book 'De Historicis Latinis' (1627) he retracted at least some of his former expressions of opinion, and 1632 he was appointed professor of history in the new university at Amsterdam, where he seems to have completed the great works on which his fame rests. Among the most important not mentioned above were 'Aristarchus, sive de Arte Grammatica, Libri VII'; 'De Historicus Græcis, Libri IV'; 'Commentariorum Rhetoricorum, sive Oratoriarum Institutionum, Libri VI'; De Veterum Poetarum Temporibus, Libri II.' In 1649, as he was climbing the ladder of his library, it broke; he fell under the shelves and books and died of his injuries.

Vossius' children were remarkable for beauty, accomplishments and learning. Grotius said of him, in epigrammatic Latin, that it was doubtful whether by his books or his children he had contributed most to adorn the age. Five of his sons, Denis, Francis, Gerard, Mathew and Isaac, are known as authors.

VOSSIUS, Isaac, Dutch classical scholar: b. Leyden, 1618; d. February 1689, the only son of Gerard Vossius, who survived him. He was carefully educated by his father, and at the age of 21 he published an edition of the 'Periplus' of Scylax, the Greek geographer, with Latin translation and notes. He afterward traveled in Italy, collecting valuable manuscripts. In 1648 he took up his abode at the court of Queen Christian of Sweden, whom he taught in Greek; but in 1658, in consequence of a quarrel with Salmasius he returned to Holland. In 1670 he came to England, procuring favor through his father's merits, and was made LL.D. of Oxford, and, though he had become an open scoffer at religion he was appointed by Charles II a canon of Windsor 1673, and had apartments assigned him in the castle, where he died. His works are numerous, and though marred by his levity and lack of judgment, some of them have been of value in ancient history.

VOTE, VOTERS, VOTING. As defined by legal authorities the word vote, as commonly used, has three meanings: (1) A ballot; (2) "the expression of wish, or choice, or preference, to the exclusion of the means by which, or method through which, that result was accomplished; the suffrage, voice, or opinion of a person in some matter which is commonly to be determined by a majority of voices or opinions of persons who are empowered to give them; the formal expression of a will, preference, wish or choice of the voter for or against any measure, any law, or the election of any person to office, or in regard to any measure proposed, in which the person voting has an interest in common with others, either in electing a person to fill a certain situation or office; or in passing laws, rules and regulations; (3) the expression of choice by or through a ballot, or by outcry, or any other means by which the choice of the voter may be lawfully made, known or communicated to others in the given instance; the wish of an individual in regard to any question, measure or choice, expressed by word of mouth, by ballot or otherwise; that by which the will, preference or opinion of a person is expressed." ('Cyclopedia of Law and Procedure,' Vol. XL, pp. 223–224, New York 1912).

Considered by itself, courts have ruled that the ballot is "nothing but a written note or communication from an elector addressed to the government, expressing the choice of the elector, but which has not as yet been delivered"; and again, as regards the election of public officials, the ballot has always meant "a paper so prepared by printing or writing thereon

as to show the voter's choice, and 'vote by ballot' [has always meant] the deposit of such paper in a box in such a way as to conceal the voter's choice if he so desires." Hence as the terms "vote" and "ballot" are sometimes confused, the courts have always distinguished between them, regarding the ballot, under our form of voting, as the instrument by which the voter expresses his choice between two candidates or two propositions, whereas the vote is his choice or election between the two as expressed by his ballot. Illegal ballots do not constitute votes and are not counted in determining the result. See BALLOT.

Mode of Expression.—Since the vote merely expresses the will of the voter, the choice may be made either viva voce, by the use of the ballot, by a show of hands, by a division of the house or meeting, etc. The machinery or means through which the choice is expressed is termed an election. From the earliest times the term "voting by ballot" has been used to distinguish open, viva voce or public voting, and secret voting. Most of the States require that all votes shall be by ballot and courts have decided that "voting by ballot signifies a mode of designating an elector's choice of a person for an office by the deposit of a ticket, bearing the name of such person, in a receptacle provided for the purpose, in such a way as to secure to the elector the privilege of complete and inviolable secrecy in regard to the person voted for." If secrecy in voting be required, then the only method is by ballot, and a ballot that does not secure secrecy of the vote is not a ballot within the meaning of the law. A Virginia court has ruled: "The vote by ballot *ex vi termini* implies a secret ballot. The secrecy of the ballot is a right which inheres in the voter and of which he cannot against his will be lawfully deprived. It must be, however, in some degree subordinate to the right to vote by ballot, of which it is but a part; and the main object, which is the right to vote, must not be defeated by a too rigid observance of the incidental right, which is that of secrecy." See ELECTIONS; PRIMARY, DIRECT; PRIMARY, PRESIDENTIAL PREFERENCE; CORRUPT PRACTICES ACTS; MINORITY AND PROPORTIONAL REPRESENTATION.

Voters.— The word voter is commonly used in the senses: (1) A person who casts a ballot at an election; an elector who actually votes; (2) a qualified voter; a person possessing the necessary qualifications entitling him to vote. "The possession of political rights is not essential to citizenship . . .; women and minors may be citizens; 'citizen' is not synonymous with 'elector' or 'voter' although the word is sometimes so used in statutes, constitutions and city charters." ('Corpus Juris,' Vol. XI, pp. 774–75, article "Citizens"). A person may be a citizen and not an elector and an elector may not be a voter. One court has ruled: "There is a difference between an elector, or person legally qualified to vote, and a voter. In common parlance they may be used indiscriminately, but strictly speaking they are not the same. The voter is the elector who votes — the elector in the exercise of his franchise or privilege of voting — and not he who does not vote." The "vote of the people" means only those people who are qualified electors or voters. See ELECTORAL QUALIFICATIONS; WOMAN SUFFRAGE; ALIENS; NATURALIZATION; CITIZENSHIP AND EDUCATION; UNITED STATES — SUFFRAGE; ELECTORAL FRAUDS AND SAFEGUARDS AGAINST.

Challenge of Voters.— See ELECTIONS.
Registration of Voters.— See ELECTIONS.
Residence of Voters.— See ELECTORAL QUALIFICATIONS.
Canvass of Votes.— See ELECTIONS.
Voting Districts.— See ELECTIONS.
Polling Places.— See ELECTIONS.
Voting Process.— See ELECTIONS.
Majority, Minority and Plurality.— See ELECTIONS; PRIMARY, DIRECT; PRIMARY, PRESIDENTIAL PREFERENCE.
Tests for Suffrage.— See ELECTORAL QUALIFICATIONS.
Disfranchisement.— See ELECTORAL QUALIFICATIONS; WOMAN SUFFRAGE; ELECTIONS; ALIENS; NATURALIZATION; UNITED STATES — SUFFRAGE.
Voting Frauds.— See ELECTORAL FRAUDS AND SAFEGUARDS AGAINST; CORRUPT PRACTICES ACTS; ELECTIONS; ELECTORAL COMMISSION; UNITED STATES — DISPUTED ELECTIONS.
Party System. — See CONVENTION, POLITICAL; ELECTIONS; BALLOT; CAUCUS; CONGRESS; PRIMARY, DIRECT; PRIMARY, PRESIDENTIAL PREFERENCE; UNITED STATES — BEGINNINGS OF PARTY ORGANIZATION.
Presidential Elections.— See ELECTIONS; ELECTORAL QUALIFICATIONS; ELECTORAL COMMISSION; ELECTORS, UNITED STATES PRESIDENTIAL; PRIMARY, PRESIDENTIAL PREFERENCE; UNITED STATES — DISPUTED ELECTIONS.
Proportional Representation.— See MINORITY AND PROPORTIONAL REPRESENTATION; APPORTIONMENT; CONGRESS; DISTRICT; etc.
Caucus.— See CONVENTION, POLITICAL; PRIMARY, DIRECT; ELECTIONS.
Primaries. — See ELECTIONS; PRIMARY, DIRECT; PRIMARY, PRESIDENTIAL PREFERENCE.

Classification of Voters.—Many terms have been applied to voters or to certain elements of the population who often vote in racial or social groups. Supposedly the voters of these groups influence party action or are an asset to a particular political party. Thus we have the "Irish vote," the "German vote," the "negro vote," the "labor vote," the Catholic and Mormon votes, the "venal vote" (the vote that can be bought in the "open market"), the rural and city votes (the struggle between which has sometimes resulted in distinct breaks with old party organizations — such as the Grangers and the Populist party, q.v.), the "popular" vote, the "independent" vote, etc.

The Independent Vote.— This term is used to distinguish the vote cast for other than the "regular" or partisan candidate. Under the popular conception of "regularity" all the members of a party must vote the straight party ticket at all times and everywhere, irrespective of conditions or candidates. Independent movements seldom capture the "straight-out" party man who makes "regularity" the chief article of his political creed. Sometimes the independent vote results in disciplining the party, since it carries with it a warning to party managers that public opinion has ceased to favor the policies advocated or the candidates presented by them. Often the independent vote purges the party of its vicious elements by inflicting defeat at the polls and thus discrediting the party leaders (which is especially noticeable in municipal elections), and its conscientious attitude always tends to preserve party purity. Politicians have recognized its influence and generally seek to gain its adherence, as in Iowa, where the Republican platform for many years contained a so-called "bad-man plank," under which members of the Republican party pledged themselves to vote against any unworthy candidate nominated by

any party. This independence of a portion of a party constituency has sometimes played havoc with the "regular" party and has often resulted in the formation of independent parties, usually known as third parties. Since the firm establishment of the Democratic and Republican parties, more than 20 of these minor parties have been organized, but most of them have disappeared after conducting one campaign, their members being reabsorbed into the regular parties or passing from public notice. Only one (the Prohibition party, q.v.) has remained continuously active since 1872, with organizations in nearly every State. The formation of this party and also of the Socialist, Granger, Farmers' Alliance, Populist, Greenback and other parties (qq.v.) was not due entirely to independent movements within certain political organizations but resulted primarily from advocacy of economic principles or reform theories, the adherents of these policies later endeavoring to obtain more widespread recognition for their doctrines by entering the political field, thus making them partisan issues. While only one of these parties has ever been represented in the electoral college (the Populist in 1892), still they have exerted a great influence not only politically through policies subsequently appropriated by one of the "regular" parties which could secure their adoption by legislative bodies but (as in the case of Prohibitionists) also in the daily lives of the people through legislation passed either at their instigation or under their pressure. The labor vote also has influenced the passage, by old-line parties, of remedial legislation which has benefited all classes, but some of which undoubtedly has been enacted purely as a "catch-penny" scheme. As examples of wholly independent movements or what might be termed "parties of protest" may be mentioned the Radical Republicans of 1864 who nominated Frémont; the "Straight-out" Democrats of 1872; the "Gold Democrats"; the "Silver Republicans"; the "Independent Party" of 1908; the fusion movements in New York City against Tammany Hall, and the Progressive party, the last named being formed in 1912 as a protest against the "steam-roller" methods of the Republican National Committee (which represented the regular or "stand-pat" element of the party) in deciding contests over delegations pledged to Taft and Roosevelt. Reform movements seldom succeed themselves and the winning and holding of a city or State on the bare proposition that one organization is better than another rarely occurs; in order to hold their positions against experienced machine politicians an equally efficient organization must be created by the independents who differ radically among themselves as to methods, whereas the machine especially emphasizes orthodoxy and places a ban on the liberty of dissent. On the other hand the independent vote has compelled the adoption of many measures that are not purely party matters, the progressive elements in both or all parties overstepping party lines and by union forcing the party bosses to accept their dictum. As instances of such movements may be cited the initiative, referendum and the recall, civil service reform, woman suffrage, direct election of senators, direct primaries, child labor and liquor legislation, etc. (qq.v.). See also AMERICAN POLITICAL ISSUES; UNITED STATES — BEGINNINGS OF PARTY ORGANIZATION; UNITED STATES — THE NEW DEMOCRACY AND THE SPOILS SYSTEM.

The Popular Vote.— In the United States the expression "popular vote" is subject to several interpretations but is commonly used to denote the expression of the public will by the voters of the land as distinguished from the votes of legislative bodies or of the electoral college (q.v.). The term is a misnomer, however, since millions of women have not yet secured full suffrage and nowhere can any election be complete since various classes of the population (prisoners, mental defectives, minors, in some States paupers and vagrants, etc.) are denied the elective franchise. (See ELECTORAL QUALIFICATIONS). Under the Constitution members of the lower House of Congress are elected by popular vote but the Constitution provided indirect elections for two other classes of national officers. (1) Senators were to be elected by the various State legislatures but owing to the defects of this system of indirect election a widespread demand arose for popular vote for senators which resulted in the adoption of the Seventeenth Amendment to the Constitution (q.v.) in 1913. Now senators may be designated in only one of two ways — either by popular vote of the whole State or by a temporary appointment by the governor to fill a vacancy in such States where the statutes permit such appointments. (2) The Presidential electors were to be chosen in whatever way the States might designate and in some States for many years the legislatures chose these electors. Whether chosen by popular vote or by the legislature, the electors were intermediary in the election of the President and thus no votes were ever cast direct for Presidential or Vice-Presidential candidates. See also PRIMARY, DIRECT; PRIMARY, PRESIDENTIAL PREFERENCE.

Preferential Voting.—The prevalence of the direct primary idea (q.v.) has resulted in the enactment of legislation which practically eliminates nominations by bare pluralities when there are a number of candidates. Five States and a few cities have adopted what is called preferential voting, the voter being allowed to designate one or more choices for each office. In Idaho, candidates must receive a majority to be nominated and the voters may indicate one choice only or first and second choices. If a majority of the first choice votes for any office are not cast for one person, both the first and second choices are counted for that office. In the Washington direct primary system, the voter indicates only one choice for an office if his party has less than four candidates, but if there be four or more candidates the voter may designate both first and second choices. If a party has four or more candidates and no one obtains 40 per cent of the first choice votes, the second choice votes are added to the first. In Minnesota and Wisconsin the designation of second choices is permitted, but should no one receive the first choice votes required for nomination, the one who receives the lowest number of first choice votes is eliminated and his votes are divided among the candidates whom the votes had indicated as their second

choice. This process of elimination is continued until one candidate has the required number of votes. In Oregon, first, second, third and other choices for two State offices are permitted and if no one receives a majority of first choices, the second choices are added and third choices also if this be necessary to give one candidate a majority. In 1917 Newark, N. J., adopted the commission form of government, with five commissioners. In the election of November 1917, the Republicans and Democrats each put forward five candidates, besides which 70 others entered the contest for the commissionerships. Each voter cast his ballot for any five candidates; he was permitted to vote for one or more of the men bracketed together and then to vote for the remaining numbers of his five outside the brackets; but to vote in the brackets for all five party choices he must vote for each man separately. After expressing his preference for the first two, the voter might express a second choice for five others; then for five others as his third choice; and then for five others as his 'other choice,' which in reality was his fourth choice. The process of elimination then took place as above indicated. See also PRIMARY, PRESIDENTIAL PREFERENCE; ELECTIONS.

Compulsory Voting.—The abstention of voters from the polls is a recognized evil for which the remedy commonly proposed is compulsory voting, secured by imposing penalties for failure to vote. If more than a fourth of the electors abstain from voting, a very inadequate expression of public opinion is obtained and oftentimes the result of an election would have been entirely different had the stay-at-homes voted, since a mere plurality of those voting decides most contests in the United States. A large portion of those not voting do not remain away from the polls either voluntarily or from unworthy motives. Many are debarred by tax qualifications; others are kept away by a change of residence shortly before election, or by reason of their employment (such as sailors, railroad employees, traveling men, students, etc.); and more than 300,000 men of voting age are deprived of the franchise as insane, paupers, prisoners or deficient in the educational tests required by some States. Sickness, accident and the infirmities of age account for the absence of thousands, since over 600,000 voters are over 70 years of age, while errors in registering or in casting ballots deprived many of votes. In the South thousands of negroes and many whites have been deprived of their votes by laws enacted with that one object in view. Hence some estimate that not more than 20 per cent of the absentees fail to cast a ballot through negligence. Nevertheless, various remedies have been tried both in this country and in Europe. In Belgium, Switzerland and some other European countries punishments are inflicted on non-voters. In Belgium, for the first offense, the culprit is at once cited to appear before a justice, who reprimands or fines him; the second offense is more severely punished, and the name of the refractory citizen is published by the magistrate and posted on the gates of the town-hall. The man who, without excuse, has abstained from voting four times in 10 years is considered unworthy of citizenship; his name is stricken from the poll lists, and for 10 subsequent years he is debarred from holding any public office. In 1636 the general court of the Plymouth colony provided that "for default in case of appearance at the election without due excuse, each delinquent to be amerced 3*s* ster." The custom continued certainly beyond 1671, for in the revision of the laws then published the fine was put at 10 shillings. Other colonies had similar laws, Virginia maintaining hers throughout her history. Her first law on the subject made the fine 100 pounds of tobacco, and in 1662 this was increased to 200 pounds. Some of the New England towns fined freemen who came late to the town meeting. None of the States have revived the colonial idea of a money fine, probably because the evil is diminishing, rather than increasing. Some of the States (as Illinois) have attempted to penalize persons who fail to vote by requiring that jurymen be drawn first from among the non-voters, but this would benefit the suffrage more than the jury system because those neglecting one civic duty could not be considered exceptionally eligible for the paid performance of a more responsible public service. Another penalty proposed is the disfranchisement of the voter who once omits to vote until he shall have purged himself by paying a fine. But this would work no hardship to most of the apathetic citizens and to a large number of non-voters would do an injustice since they stay away through no fault or choice of their own. Furthermore, many abstain from voting as an effective rebuke to party leaders because they consider the party candidate unworthy and are unwilling to vote for the candidate of any other party. The most effective remedy appears to be in educating the voter to his civic responsibilities, in rendering the voting process easy, in presenting live, vital and interesting issues, and in persuading the individual voter that his ballot is of the utmost importance. To a considerable extent interest in elections has been quickened in those States which have direct legislation and direct primaries.

Cumulative Voting.—See MINORITY AND PROPORTIONAL REPRESENTATION.

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VOTING MACHINE. The wave of ballot reform which swept over the United States of America immediately after the year 1888 firmly established the Australian or blanket ballot as a factor in the election of practically all the States of the United States of America. This ballot was intended to encourage freedom of choice on the part of the voters and while it seemingly makes it easy to split the ticket (or to cast an independent ticket) it ofttimes disfranchises the voter because of his mistake in marking it. The introduction of the Australian ballot opened the way for voting machines and demonstrated the need of them. The voting machine is a mechanical Australian ballot, having for its object the correcting and preventing of the abuses to which the Australian ballot system is susceptible and expediting the returns. It accords to each voter his full voting privilege; it prevents him from making mistakes that would take his ballot out of compliance with the law, and makes it unnecessary for the judges to inspect the ballot to determine its legality. The machine counts the ballot for each candidate at once, making it a part of the total vote. When a vote is cast, the operating devices are automatically reset and the machine is again ready for operation by another voter. Machines include safeguards against frauds by election officers. They make it more easy for the voter to accomplish his work and prevent him, to a great extent, from making a partial or complete failure in voting. The use of them compels secrecy, reduces the amount of labor involved on the part of election boards, secures greater economy in the expenses of election and gives the returns at once on the closing of the polls.

The Requisites of a Complete and Legal Voting Machine.— A voting machine must enable a voter to cast his vote in secret; that is, so that no one can see or know for whom he has voted. The method of voting must be simple and within the comprehension of all classes; so that illiterate or blind persons, after receiving instruction, can vote without assistance. It must be convenient in its operation. It must permit a voter to vote for all the candidates nominated by any party, or to vote in part for the candidates of one party and in part for the candidates of other parties and provide for voting for persons who are not nominated by any party for any office. It must give the voter perfect freedom in his selection from any of the candidates without regard to their position on the machine. For some offices, but one candidate is to be voted for, for others two or more may be nominated by each party. It must be beyond the power of the voter to vote for more persons than he is entitled to vote for, or to vote twice. It must permit a voter to change his vote or correct a mistake, while he is in the booth; to split his electoral vote; voting on questions; limited or restricted voters (females or others) to exercise their rights under the law, but not to exceed them, either for candidates or questions. It must count, positively and accurately, every vote cast. It must prevent defective ballots. The counters should be so placed that they can be conveniently examined before and after the election. All the moving parts should be controlled by locks, so that the register of the vote shown on the counters cannot be changed, thus maintaining a permanent record during the time prescribed by law. The voting machine must be so constructed that it cannot be unlawfully manipulated by anyone, under conditions that prevail in elections legally conducted. It must be able to bear the most rigid scrutiny of expert mechanics and others qualified to judge of the merits of such mechanism. There must be simple and positive action of the working parts, which must be so related that if misplaced by the voter either by accident or design, no injury will result from the further operation of the machine.

The first voting machine built and actually used in an election was the invention of Jacob H. Myers; it was used in the election of the town of Lockport, N. Y., in 1892 and attained considerable use elsewhere in that State. This machine was legalized in the State of New York, as well as the States of Connecticut and Michigan. Afterward improved machines began to make their appearance. The inventions of Sylvanus E. Davis and Alfred J. Gillespie resulted in the Standard and United States Standard Voting Machines, which have attained the greatest use and perhaps the greatest celebrity in the voting-machine art. These machines are used extensively in the States of New York, Connecticut, Wisconsin, Michigan, Indiana, New Jersey and California. The election for the entire city of Rochester, N. Y., in 1898 was held by 73 of these machines and the election was the first complete and convincing demonstration of the practicability of using voting machines on a large scale. In Buffalo, N. Y., these machines have been used in the elections since 1899; the returns from all of the 108 election districts with over 60,000 voters have been received and tabulated at the city hall in 35 minutes and papers sold on the streets within one hour after the closing of the polls, although

the ticket was of considerable size, containing some 150 candidates.

The United States Standard Voting Machine has an upright keyboard, on which the party rows of candidates and keys therefor are arranged in horizontal lines with the lines of the offices transverse thereto. At the end of each party row, a lever is provided by means of which all of the keys of that party row may be moved together to a voting position over the names of the candidates nominated by that party; or the keys may be moved separately to a voting position over the names of the candidates for which the voter desires to vote. Before the voter can arrange his ticket he must enter the booth by closing the curtain around him to shield himself from the public, after which he pulls either a party lever for straight ticket voting or a releasing lever, to unlock the keys to enable him to prepare his ballot independently. The machine affords the voter an opportunity to cast a straight party ticket, to split his ticket, to correct mistakes, to vote for candidates not in nomination and gives him all facilities to cast only a legal vote, which is sure to be counted as he indicates. If constitutional amendments or questions are submitted to the people, they can be voted on, provisions being made to vote "yes" or "no" on all such questions or amendments. By opening the curtain the voter counts his vote and sets the machine for the next voter. The total vote for each candidate and question is given at once at the close of the election. The machine is also equipped with lockouts which are operated by the election officers to prevent particular voters from voting for offices or on questions on which they are not entitled to vote.

The machine is provided with a protective counter which counts up to 1,000,000 and cannot be reset, and reliably indicates whether the machine has been operated or changed after it has been prepared for an election, or after the close of an election.

The Abbot machine has had some use in the State of Michigan, being legalized by the laws of that State. It has all of the candidates for one office mounted on a slide, which can be adjusted according to the wishes of the voter. He can move the office slides to the right or to the left, so as to bring the name of the candidate desired into line with the operating bar, by the operation of which the vote is registered on counters. The machine is limited, however, in that it cannot group; that is, provide for the voting for two or more candidates on one office line, which is always necessary when two or more candidates are to be elected to an office.

The Bardwell machine, which has been used to a limited extent, has the candidates arranged in office lines and party rows. When the voter enters the booth, he is furnished with a key which he inserts in the key-hole belonging to the candidate he wants to vote for and turns it half way around. This counts a vote for that candidate and locks the other candidates for the same office from receiving a vote, and by repeating this operation on other office rows the voter is enabled to cast his vote as he desires for the whole ticket. In case he has made a mistake by casting a vote for the wrong candidate, he can withdraw this vote by again inserting the key in its key-hole and turning it backward. Straight party tickets are counted on separate counters, the operation of which, by the voter, locks the balance of the counters against operation, but the total of the counters must be added to the counters of the candidates of that party at the end of the election. The machine is so arranged that it is impossible for two persons to vote at the same time or for a second voter to vote before the preceding voter has left the booth by the opposite direction from which he entered it. Consult Cleveland, F. A., 'Organized Democracy' (New York 1913); Luddington, A. C., 'American Ballot Laws' (Albany 1911); National Municipal League, 'Conference for Good City Government' (New York 1910).

CARL F. LOMB,
United States Standard Voting Machine Company.

VOTIVE CROWNS. See CROWNS AND CORONETS.

VOUCHER, *in law,* (1) a book, document or other instrument verifying the truth of accounts, showing the payment of a debt or the like. Any instrument which strengthens oral evidence or may be used in its place has been held to be a voucher. (2) Formerly, a person summoned into court to defend the title of a tenant on a general warranty against another claiming title; also, the proceeding in such suit.

VOUDOO, or VOODOO, certain superstitious rites and beliefs brought originally from West Africa. There it was characterized by serpent worship and incoherent and licentious dances and sometimes by human sacrifices. In the Southern States, before the Civil War, voudooism was generally practised among the slaves, and voudoo doctors were common. Many of these doctors were skilful poisoners, and while the great mass of their professed art was a rank imposture, still they possessed enough of devilish skill to render them objects of wholesome dread. Their services were more often invoked in destructive than in curative offices. If a negro desired to destroy an enemy, he sought the aid of the voudoo, who, in many cases, would undertake to remove the obnoxious one and the removal was generally accomplished through the medium of poison. No doubt exists that in many cases the victim of a voudoo died from sheer fright, for whenever a negro had reason to think that he was possessed by the spell of the voudoo, he at once gave up all hope, thus hastening the accomplishment of the end toward which the energies of the sorcerer were directed. Their incantations and spell workings were always conducted with the greatest secrecy, no one being allowed to witness the more occult and potent portion of their ritual.

VOUET, voo-ā, **Simon,** French painter: b. Paris, 9 Jan. 1582; d. there, 30 June 1649. At 14 he went to London where he was already able to make a living by his art, and going to Constantinople in 1611 obtained many commissions there. The next year he studied the works of Paul Veronese at Venice and was later made president of the Roman Academy, but was presently recalled to Paris and made court painter by Louis XIII. The progress of French

art was much advanced by him and among noted pupils of his were Lebrun, Lesueur and Mignard.

VOUSSOIR, voo-swär', *in architecture,* one of the stones which form an arch of a bridge, vault, etc., always cut more or less in the shape of a reversed truncated pyramid or wedge. The under sides of the voussoirs form the intrados or soffit of the arch and the upper sides the extrados. The middle voussoir is the keystone of the arch. See ARCHITECTURE.

VOW, a solemn promise made to perform some act or to follow out some line of conduct, confirmed by an appeal to the Supreme Being, or supernatural power, to favor or to punish the maker of the promise according as he fulfils or breaks such promise. Some vows bind those who make them to perform a certain act out of gratitude for a particular favor, as in the case of Jephthah; others comprehend the performance of certain limited duties during a whole life-time, as the marriage-vow and a sovereign's coronation oath, and others, again, give a particular form to the entire character of a man's life, as the monastic and priestly vows. Among Roman Catholics vows are divided into two kinds: solemn, those taken in the face of the Church; and simple, those made in private. Bishops are considered to have the power of releasing from simple vows generally; but the power of dispensing in important simple, and in all solemn vows rests with the Pope; the vows specially reserved for papal dispensation were: that of absolute and perpetual chastity, entering into a religious order, making a pilgrimage to Rome or Compostella, or of setting out on a crusade. See ORDERS, RELIGIOUS.

VOWEL (from the French *voyelle;* Latin, *vocalis*), a simple articulated sound, which is produced merely by breathing, accompanied by a constriction in the larynx, a greater or less elevation or depression, expansion and contraction of the tongue and contraction or expansion of the lips. The vowel sounds of the English alphabet are imperfectly represented by five letters, *a, e, i, o, u* (and sometimes *w* and *y*); the deficiency of our alphabet is, therefore, apparent when it is remembered that there are at least 13 distinct shades of vowel-quality in the spoken language as heard in the words *ale, an, ask, ah, all; ell, err; eel, ill; old, ore; pull, ooze.* The long sound of *i,* as in *ire,* and of *y,* as in *by,* although represented by one letter, are really compound vowel sounds or diphthongs. The French simple vowel sounds *u* and *eu,* and the German *ö* and *ü,* are not heard in the English language. See the articles under the several letters.

VOYAGEUR, vwo-yą-zhėr', a French-Canadian term for traveler. It was specifically applied to a class of men employed by the fur companies in transporting goods by the rivers and across the land to and from the remote stations of the Northwest. They were nearly all French-Canadians or half-breeds.

VOYNICH, voi'nĭch, **Ethel Lillian Boole,** English novelist: b. 1864. She was a daughter of G. Boole (q.v.), and was married to W. M. Voynich, a Polish writer in England. She is the author of 'Russian Humor'; 'Stories from Garshin'; 'The Gadfly,' a very striking story which excited much attention (1897); 'Jack Raymond' (1901); 'Olive Latham' (1904); 'Six Lyrics' (1911).

VOYSEY, voi'zĭ, **Charles,** English theistic clergyman: b. London, 18 March 1828; d. 1912. He was graduated from Oxford in 1851, took Anglican orders and was curate of Hessle, Yorkshire, 1852–59, of Creighton, Saint Andrews, Jamaica, 1860–61, and of Saint Marks, Whitechapel, London, 1861, but lost the last position on account of a sermon of his against endless punishment. He was vicar of Healaugh, Yorkshire, 1864–71, but having published in 1865 sermons declared to be opposed to the Bible and the 39 articles, he was prosecuted in the Chancery court and the case being taken to the judicial committee of the Privy Council he was deprived of his living and forced to pay the costs in 1871. He subsequently founded the Theistic Church in Swallow Saint Piccadilly, London, the church being supported by the "Voysey establishment fund." Among his published works are 'The Sling and the Stone' (1872–93); 'Theism as a Religion of Common Sense' (1894); 'Theism as a Science of Natural Theology and National Religion' (1895); 'Testimony of the Four Gospels concerning Jesus Christ' (1896); 'Testimony of the Four Gospels' (1907).

VRAS, vräs, **Stanko** (also known as JACOB FRAS), Serbo-Croatian poet: b. Zerovec, Styria, 1810; d. 1851. After studying at Gratz, he became editor of the magazine *Kolo.* At that time a number of literary men were interested in combining the Serbo-Croatian language with the Slovene into a common tongue which they called the Illyrian. In this medium, Vras wrote many poems of no mean merit. The vivid local coloring of his works makes him the most prominent figure of the poets of his nationality. His writings and letters were collected under the title 'Djela' (4 vols., Agram 1863–64, the fifth volume in 1877).

VREDENBURG, Edric Walcott, English novelist: b. Para, Brazil, 29 March 1860. He was educated at Tonbridge School, Kent, entered the army and was a lieutenant in an Essex regiment. He has since given his attention to writing novels as well as stories and verse for children. Among his works may be cited 'The Haunted House in Berkeley Square'; 'A Bitter Inheritance'; 'At the World's Mercy'; 'By the Queen's Command.'

VREELAND, Herbert Harold, American railway president: b. Glen, Montgomery County, N. Y., 28 Oct. 1856. He received a common school education and worked his way upward from a humble position to that of railway president. In 1893 he became president and general manager of the New York Metropolitan Street Railway Company and was prominent in the consolidations which subsequently placed all surface railways on Manhattan Island under one management.

VRIENDT, frēnt, **Frans de.** See DE VRIENDT, FRANS.

VRIESLAND, frēs'länt. See FRIESLAND.

VRIHASPATI, vrē-hăs'pa-tē, or, as in Vedic works, BR'IHASPATI (from Skr. *br'ih,* probably hymn, prayer, and *pati,* protector, lord): in Vedic mythology, the guardian of the

hymns or prayers addressed by the pious to the gods; therefore, considered as mainly instrumental in insuring the efficacy of the sacrifice. He is "the first-born in the highest heaven of supreme light," because the prayers reach him first; he is "seven-faced," because his faces are the seven Vedic meters, and he is "attended by all the companies of gods," or "represents all gods," when the sacrifice is performed. Being to that of a priest and spiritual teacher, he is sometimes also identified with Agni. His function of guardian of the hymns being similar to that of a priest and spiritual teacher, he is further represented as a priest of the gods, who himself "celebrates worship," and as imparting "virtuous-instruction." In the epic and Purânic mythology, five figures especially as preceptor of the gods and R'ishis, as such causing them to perform sacrifices.

VRYHEID, frī'hīd, South Africa, a town of Natal, prior to the South African War, 1899–1902, belonging to the Transvaal Republic. It is about 280 miles north of Durban by the railway through Pietermaritzburg, Ladysmith and Dundee, in the centre of a district containing coal, gold and other minerals. It has Dutch Reformed, Anglican, Wesleyan and other churches, a masonic temple, schools and mineral springs. The district of Vryheid was ceded to a party of Boers by Dinizulu, a Zulu chief, in 1884 and was constituted a separate state under the title of the New Republic. In 1888 it was incorporated in the Transvaal. The white population of the district is about 5,800; of the town, 2,400.

VUG, VUGG, or **VUGH,** a small cavity in a rock mass. The term is sometimes used in the same sense as geode (q.v.), but by many it is restricted to minute cavities produced by shrinkage in the process of replacement.

VUILLAUME, vwē-yōm, **Jean Baptiste,** French violin maker: b. Mirecourt, 7 Oct. 1798; d. Paris, 19 Feb. 1875. He settled in Paris in 1818, and imitated the instruments of Stradivarius, the Amatis and Maggini. He came to stand with Lupot at the head of French musical instrument makers of the 19th century. Long journeys were made by him after special kinds of woods, and he was constantly experimenting toward improvements. He received many distinctions. In the Paris Exposition in 1867 he was ranked above competition.

VULCAN, the Roman god of fire and patron of metallic handicrafts; the son of Jupiter and Juno, and identical with the Greek Hephæstus. According to mythology, Vulcan was ugly and deformed, and Juno, ashamed to own such a child, dropped him from heaven, when the infant god, falling into the sea, was rescued and adopted by Thetis, who kept him till nine years of age. He was then restored to his parents. Soon after his return to Olympus, Vulcan took his mother's part in one of the quarrels between husband and wife; Jupiter, enraged at Vulcan's audacity, flung him from heaven. The youth alighted on the island of Lemnos, breaking his ankle in the fall; here he raised forges and workshops, and became the chief of artificers. Some poets, however, fix his workshop on Olympus, another on Etna, where Cyclops was his chief assistant. He fashioned Pandora, and had Venus given him for his wife, by whom he was father of Cupid. Vulcan is represented bearded, covered with dust and soot, and toiling hard at his forges. Consult Gayley, C. M., 'Classic Myths, in English Literature' (Boston 1911).

VULCAN, *in astronomy,* the name of an assumed planet between the Sun and Mercury. In 1859 M. Lescarbault, a village physician of Orgères, France, saw a small dark planet-like body pass across the sun's disc. The planet was called by anticipation Vulcan, but its existence still remains unconfirmed, though M. Porro and M. Wolf of Zürich reported seeing its transit in 1876.

VULCANISM. See VOLCANISM.

VULCANIST, the name applied to an old school of geologists at the end of the 18th and the beginning of the 19th centuries, who held that most rocks, but particularly the basalt, were due to volcanic or igneous agencies. They were opposed by the Neptunists led by Werner, who believed that this rock in common with most others was the product of crystallization from water.

VULCANITE, the harder of the two forms of vulcanized caoutchouc (see VULCANIZATION). It is differentiated from the softer product (soft rubber) in containing a larger quantity of sulphur and being cured at high temperatures. In color it is dark brown, almost black, but it may be made jet-black by litharge or red by vermilion. It is not affected by the caoutchouc solvents, or by the mineral acids and alkalies. It is much used for the plates of electrical machines. The other applications of it are, of course, very numerous. Ebonite is a rarer name for it. See INDIA-RUBBER; RUBBER MANUFACTURES, AMERICAN.

VULCANIZATION, a method of so treating caoutchouc (q.v.) with some form of sulphur as to effect certain definite changes in its properties and obtain a softer or harder product. The former is known as soft rubber, the latter as vulcanite (q.v.). The method of preparation of soft rubber goods is followed largely, but an increased proportion of sulphur together with high heat renders the product hard. The process of vulcanization was invented by Charles Goodyear (q.v.), who obtained his first patent in connection with it in 1844. See INDIA-RUBBER; RUBBER INDUSTRY IN THE UNITED STATES.

VULCANO, vôl-kâ'nō, or **VOLCANO,** *vŏl-:* most southern of the Lipari Islands (q.v.), in the Mediterranean, 12 miles from the north coast of Sicily, about seven miles long and three miles wide. Near the centre is a crater one-fourth of a mile in circumference, which constantly emits smoke and vapors. The highest point of this crater, which is also the highest point of the island, is 1,601 feet. Only the south part of the island is fertile. The products are grapes, wine, fruit, corn and flax.

VULCANOLOGY, that branch of geology that treats of the process of Vulcanism, or the movements of molten rock in or on the earth. See VOLCANO; MOUNTAINS; section on *Igneous Rocks* in article on ROCKS, and section on *Volcanism* in article on GEOLOGY.

VULGATE, The, is the Latin translation of the Bible, due mostly to Saint Jerome (q.v.),

which has been adopted as the authorized Bible of the Roman Catholic Church. The name, *vulgata bibiliorum editio*, which means common or current edition of the Scriptures, was first applied to the Septuagint and then to the Old Latin Version derived from it; but after Saint Jerome's new translation came into common use, it inherited the name. Some scholars still speak of the Old Latin Vulgate or the Greek Vulgate; but the name, used without qualification, properly applies only to the official Roman Catholic Bible.

Place in History.— Neglected for a long time, the Vulgate has during the last few decades won back from scholars a recognition of its intrinsic excellence, its importance for the study of the Bible text, and its place in history. In English-speaking countries, this is due mainly to the labors of Anglican divines, such as Westcott, Wordsworth, White, Scrivener and Burkitt. Westcott, for instance, regards it as "not only the most venerable, but also the most precious monument of Latin Christianity." Its great antiquity and the exceptional qualities of its translator make it a most valuable aid toward the recovery of the original text. Its New Testament, in its revised form, is contemporary with the oldest Greek manuscripts and embodies a much earlier text. The Old Testament antedates by several centuries the oldest Hebrew manuscripts. Almost from the time of its publication, the Vulgate has had a very great influence upon the religion and civilization of Europe. It gradually became the Bible of Europe; it has been called *the* book of the Middle Ages. Latin then was the language of the educated and the Vulgate their Bible. From it was derived the theological language of Europe and much of its thought. Hebrew idioms came through it to enrich our daily speech. National literatures took their rise in ventures to translate it: its text called forth the most beautiful work of the illuminators of manuscripts. Poetry, painting and music owed to it much of their inspiration and grandeur. "It was the real parent," says Westcott, "directly or indirectly, of all the vernacular versions of western Europe," except the Gothic of Ulphilas. The translators of the Protestant versions had it constantly in hand; though it was "the guide" rather than the source of their work. Upon English Bibles, its influence is very marked, particularly upon the Authorized Version. The Psalter of the Prayer Book, still used in worship, is a translation of the Vulgate: such naturally, too, are all modern Roman Catholic versions, like the English Douai Bible.

Latin Bible Before Saint Jerome.— The Vulgate, we have implied, was preceded by an earlier Latin Bible, and its history cannot be properly understood without some account of the forerunner. Throughout the 4th century, this Old Latin Version, as it is called, was read in all the churches of northern Africa and western Europe, but the tradition of its origin seems to have perished. It is known that it was based, not on the original Hebrew, but upon the Greek of the Septuagint. This is its most notable difference from the Vulgate. It can be traced back with certainty to the middle of the 3d century and, with great probability, even a century earlier. Its place of origin is unknown; nor even can we determine whether there were several distinct translations, made in different times and countries, or originally but one. The Old Testament has survived in a few books and many fragments, but these do not shed much light on their origin; and the many manuscripts of the New Testament furnish to scholars no satisfactory solution. The old Latin Version is historically important by reason of its influence upon the Vulgate; moreover, despite its variations, it is a witness of the highest value to the current New Testament text of the 3d century. The books and fragments of the Old Testament also aid in determining the text, and sometimes the arrangement, of the Septuagint. Certain books of this ancient version, we shall see, were revised by Saint Jerome and incorporated in the Vulgate; a few were adopted without change and remain part of the Catholic Bible. It was the corrupt condition of the existing Latin text that caused Saint Jerome to undertake, first, a revision and then a translation of the Bible. We must remember that in his day, toward the end of the 4th century, the old version had been in circulation about 200 years. It is easy to see to what chances of corruption it was exposed. Experience proves that no manuscript can pass through many hands without the introduction of frequent changes and in the case of this old version, more than the ordinary causes of corruption seem to have been at play. Saint Augustine (q.v.), a younger contemporary of Saint Jerome, was so conscious of the almost innumerable variations in the current text that he advanced the theory — or possibly we should say, handed down the tradition — that there were almost innumerable distinct translations. Saint Jerome goes even further, stating that there were nearly as many types of text as there were manuscripts. This much is clear, that the confusion was almost hopeless and very perplexing, whether we consider public worship or private devotion. There was an urgent need of a revised text, and Latin Christendom was most fortunate in possessing two men fitted to furnish it, Damasus the Pope and Jerome the scholar. Damasus was the most distinguished pontiff of his century and left to posterity the fame of an enlightened and energetic reign. As to Jerome, Westcott does not exaggerate in saying that he was the one man in 15 centuries capable of the task he accomplished; without him, in all probability, Europe would have had to wait till the Renaissance for a translation comparable to the Vulgate. The history of his life is in great part the history of its production.

Saint Jerome (Eusebius Hieronymus, as he was called) was born of Christian parents at Stridon, on the borders of Dalmatia and Pannonia, now Szalad in Hungary, probably between 340 and 346 A.D. His father, Eusebius, a man of education and means, perceived the ability of the boy and sent him to Rome, at an early age, to complete his studies. There he awoke to the love of literature and, despite some aberrations, was strengthened in the love of religion — the two impulses which dominated his life and have left their impress on western Europe. Unconsciously, he was all along preparing himself for his great task, the translation of the Bible. He acquired a firm grasp of the Latin idiom, through his deep study of its literature, and laid the foundations

of his subsequent thorough knowledge of Greek; at the same time, he was fostering that religious spirit which later caused him to devote himself to sacred rather than secular studies. He was baptized in Rome about 366. Not long after, he removed to Trier, in Gaul, and later (370) to Aquileia in North Italy where in the company of other young men of talent and piety, he vigorously pursued the study of theology. The company breaking up in 373, Jerome traveled in the East, visiting Greece, Asia Minor and Syria. At Antioch, in Syria, a dream decided the work of his life: Christ, in an apparition, reproached him with being a Ciceronian and no Christian. Henceforth he gave himself to sacred studies and religious practices; in his old age, however, he was able to reconcile with them the reading and teaching of pagan literature. In the summer of 374, he retired to the desert of Chalcis, east of Antioch, where he spent five years in study and prayer. During this period, under the instruction of a Jewish rabbi, he made a diligent study of Hebrew; at this time, too, began his correspondence with Pope Damasus, which led later to such happy results. Jerome was ordained priest at Antioch, in 379, though he appears never to have exercised the functions of his office. In 380, we find him in Constantinople, the capital of the empire, where he fell under the spell of the winning and cultivated Saint Gregory Nazianzen. At length, in 381 or 382, he returned to Rome. He was soon admitted into the closest intimacy with Damasus, which lasted till the Pope's death, in December 384. It was during this period (in 383) that Jerome, at the request of the Pope, revised the Old Latin Version of the gospels and shortly after, of the remaining books of the New Testament. His Roman Psalter was also published about this time. Jerome had great popularity and influence at Rome under Damasus, and, naturally, had made some enemies; their opposition increased after his patron's death and caused him to leave Rome forever, in August 385. He returned again to the East; his eager, inquisitive mind and his spirit of piety both impelled him to visit all the holy places of Palestine and to study its topography, cities and traditions. Finally, in the autumn of 386, he settled at Bethlehem, near the cave of the Nativity, and built a monastery, over which he henceforth presided. In this retreat, during the last 34 years of his life, he "scorned delights and lived laborious days" of study, writing and meditation: their fruit was given to the world in his famous epistles, his commentaries and controversial writings, but above all in his translations of the Sacred Books. In his work on the Hebrew text, he was almost constantly assisted by learned rabbis. He died in 420.

Revisions of Old Latin Version.— New Testament.— Jerome's work as a reviser and translator began with the gospels (383). These books were the most important and familiar, and also, because of their wide circulation, the most corrupt in text. The task which Damasus committed to him was not a new translation, but merely a revision of the familiar text. For this, Jerome collected and consulted the best Greek manuscripts he could find, and with their guidance, corrected the Latin wherever the sense required it. Shortly after the rest of the New Testament was corrected in the same way, though more slightly, it appears. All this work became part of the Vulgate: Jerome never made a fresh translation of the New as he did of the Old Testament.

Old Testament.— The Psalter, the prayer-book of the Church in daily worship, was the first book retouched by Saint Jerome. In the course of his life he published three editions of the Psalter; it will be convenient here, for clearness sake, to speak of all three. The first or Roman Psalter, published at Rome in 383, was adopted there for public services and continued in use till the time of Pius V (1566). For this revision, Jerome had recourse only to the Greek text. It never became part of the Vulgate and has gone out of use, except that the invitatory psalm (94) in the Breviary (q.v.) and the quotations from the Psalter in the Missal are taken from it. This revision itself becoming corrupt, through the errors of copyists, a second revision was called for. This, published at Bethlehem in 387, is the Gallican Psalter, so called, because it was adopted for public worship in the churches of Gaul. It was based likewise upon the Greek text, but is a more critical recension than its predecessor. It is now used throughout the Latin Church and has been incorporated in the Vulgate; yet it is not Jerome's best edition of the Psalter. This is conceded to be his third or Hebrew Psalter, a new translation made directly from the Hebrew (probably 392).

Other books of the Old Testament were revised by Jerome according to the Septuagint (q.v.): he himself mentions Job, Proverbs, Canticle of Canticles and Chronicles by name, but it is believed, from his words, that he revised all the books of the Septuagint which are contained in the Hebrew Canon. All, however, have perished except Psalms, mentioned above, and Job.

Translations from the Hebrew.— Jerome's work as a reviser made him thoroughly acquainted with the great variations of the Septuagint text and threw him back, more and more, upon the Hebrew as the one standard. There, thanks to the watchfulness of the rabbis, he found instead of the confusing variety of the Septuagint an almost perfect agreement in the manuscripts. The controversy with the Jews, who taunted Christians with using a corrupt text, had great weight in determining Jerome to translate the Hebrew Bible. His friends, too, were repeatedly urging the task upon him, so he finally set about it, not following any set plan (he began with Samuel and ended with Esther), but translating such books as his friends requested. This translation, therefore, it appears, contrary to the impression of many, was not undertaken as an official work, destined for public services. He intended it primarily for the eyes of his friends and desired them, out of a fear of controversy, to keep it private. For about 15 years, from 390 to 405, he labored at this great task and succeeded in translating all the books of the Hebrew Canon (same as the Protestant Canon). Of the remaining books of the Old Testament, which are accepted as inspired by the Roman Catholic Church, he translated Tobias and Judith from the Aramaic, and from the Greek the passages of Daniel and Esther, which are not found in the Hebrew

(Dan. iii, 24–90, xiii–xiv; Esther x, 4–xvi, 24). There is ground for believing that he translated or revised the books of Maccabees. Wisdom and Ecclesiasticus he left untouched, and passed over Baruch.

Reception of the New Translation.— Jerome's friends could not keep their good things to themselves; his translations, eagerly sought and copied, and soon widely circulated, raised a storm of opposition. The gospels, indeed, though sanctioned by the authority of Pope Damasus, had been bitterly attacked by many; but when his Old Testament was published and the extent of its variations from the Old Latin rendering of the Septuagint became known, Jerome found enemies in every quarter. The Septuagint was popularly regarded as an inspired translation, according to the well-known legend; to vary from it was to corrupt the word of God. So Jerome was sacrilegious and presumptuous in daring to correct the venerable text: he was disturbing the faith of the people. Even the great Augustine at first did not approve of his translation. Jerome defended himself with more than his usual warmth, especially against the charge of disrespect toward the Septuagint: for had not he spent years of his life rendering it faithfully into Latin? Gradually the storm subsided; part of his work won favor and public recognition; the bitter attacks were passed — he died in peace and was recognized as a Saint and Doctor of the Church.

Vulgate During the Middle Ages.— It was long centuries, however, before the translation of Jerome became the Vulgate or official version. Old memories and affections were entwined around the ancient text and the new was looked upon as an intruder; just as in our own day, the Revised Version has thus far made no advance in public favor. At Rome, Jerome had great prestige because of his many friends there, his reputation as a scholar, and the patronage extended to him by Damasus. Many of the clergy admired and used his version and the example of Rome was followed in different parts of Europe. The remote provinces, like Britain and Africa, clung to the old. In the 6th century we see the new translation current almost everywhere except in Africa; yet Pope Gregory the Great, who saw the beginning of the next century and died (604) just 200 years after Jerome had completed his translation, did not enforce its usage. His marked preference for it, however, turned the tide in its favor and it spread rapidly all over Europe. In the 9th century it was used throughout the Church; yet it is a curious fact that the Old Latin survived till the 13th century wherever the heresy of the Albigenses prevailed, and even, in Bohemia, till the 15th century (Berger, p. 74).

Corruption.— The old Bible did not die without leaving traces of itself upon its successful rival. It must be remembered that in the early Middle Ages the Bible circulated, not in one volume, but in separate books; it easily happened, then, that a new manuscript was copied, according to the books at hand, partly from the old, partly from the new translation. Many readings of the Old Version, too, found their way into the new, particularly in the gospels and epistles, where the familiar text, dwelling in the memory of the scribe, displaced Jerome's corrected text. In the synoptic gospels, containing so many parallel passages, the text of one gospel was often substituted for the text of another. Occasionally, though not frequently, a phrase was altered to give clearer expression to a dogma. Other sources of error existed, but the chief of all was the perennial one — the carelessness of scribes.

Efforts to counteract this downward tendency were unceasingly made during the Middle Ages. Cassiodorus, Alcuin, Lanfranc, Stephen Harding and many others are mentioned as strenuous laborers in this field. Roger Bacon, we are told, spent nearly 40 years correcting and explaining the sacred text. Schools even were established for the purpose of recovering, diffusing and handing down to posterity the pure text of God's word. Often the supposed corrections were themselves mistakes; yet they were perpetuated in many manuscripts, with the chance of being accompanied by new errors in every new copy. Their importance, however, must not be exaggerated. The many manuscripts of the Vulgate which we inherited from the Middle Ages show, so far as they have been examined, that these mistakes are seldom serious from a dogmatic or devotional point of view. Only the printing press seemed capable of preventing their multiplication, for the scholars of that time, as White says, had used all the remedies that could be applied before the invention of printing.

Printed Vulgate.— The press, at first, did little toward the restoration of a pure text. The best texts, it is believed, were preserved in the most handsome manuscripts and these were too costly to be sent to the printing shop. Inferior texts were consequently the first printed and little criticism was applied to correct them. The famous Complutensian Bible made an attempt at a critical edition of the Vulgate, but its success was slight. Stephanus, a French Protestant, was somewhat more successful. The printing press was multiplying Bibles rapidly and mistakes as well, it may be said. According to White, during the first half century following the invention of printing, in 1436, it is computed that 124 editions of the Vulgate were printed; another count, from 1471 to 1599, enumerates 179 editions.

These editions were not mere reproductions, one of another; many different manuscripts had been consulted and many editors were at work, each using his judgment (or his whim) in the correction and choice of texts. To add to the variety, several new Latin translations, by both Catholics and Protestants, were put forth.

Decree of the Council of Trent.— It is easy to see how bewildering must have been this immense variety of old and new translations. A standard text had become imperative. It was necessary, too, since the question of the Canon of Holy Scripture was debated, to determine which books should be included in the Catholic Bible. Accordingly, in 1546, the Council of Trent closed the Canon, accepting as sacred and canonical all those books which the tradition of the Church and especially the Council of Florence had declared to be inspired; moreover, the decree specified that they were accepted "as they were had in the Latin Vulgate." In the same year the council ordered that the Vulgate be printed in as correct a text as possible and requested the Pope to carry out

the measure. These two important points — the books included in the Vulgate and the text authorized by the Roman Catholic Church — call for separate and somewhat detailed treatment.

Books Included in Vulgate.— First, we give a list of the Vulgate books, in their proper order, according to the names which they bear in the Douai translation. These names, it will be seen, often differ from those of the Authorized Version; they are derived from the Septuagint through the Latin, while the Protestant names come in part from the same source and in part directly from the Hebrew. We subjoin the latter wherever the difference is notable. The books of the Old Testament are: Genesis, Exodus, Leviticus, Numbers, Deuteronomy, Josue (Joshua), Judges, Ruth, I and II, Kings (I and II, Samuel), III and IV, Kings (I and II Kings), I and II Paralipomenon (Chronicles), I Esdras (Ezra), II Esdras, or Nehemias, Tobias, Judith, Esther, Job, Psalms, Proverbs, Ecclesiastes, Canticle of Canticles (Song of Songs), Wisdom, Ecclesiasticus (Sirach), Isaias, Jeremias, Lamentations, Baruch, Ezechiel, Daniel, Osee (Hosea), Joel, Amos, Abdias (Obadiah), Jonas, Micheas (Micah), Nahum, Habacuc, Sophonias (Zephaniah), Aggeus (Haggai), Zacharias, Malachias, I and II Maccabees. In the New Testament, the books and their names are identical with those of the Authorized Version, except that the last book is called in the one Apocalypse and in the other Revelation. The Vulgate, as finally adopted by the Roman Catholic Church, is a mosaic: it is made up of direct translations from Hebrew, Aramaic and Greek, of revisions of Old Latin, according to the Septuagint and the Greek New Testament, and, lastly, of Old Latin translations unrevised.

Differences Between Roman Catholic and Protestant Bibles.— The foregoing list will have made clear the most striking difference between the Vulgate and the ordinary Protestant Bible of to-day — the inclusion of Tobias, Judith, Wisdom, Ecclesiasticus, Baruch and I and II Maccabees among the sacred books of the Bible on an equal footing with the rest. These books were formerly printed in Protestant Bibles, sometimes as integral parts of Scripture, sometimes with an undefined standing, more frequently as being unequal to the other books, but useful "for example of life and instruction of manners." With them may be classed the additions to Esther and Daniel, mentioned in the fifth topic. All these portions of the Vulgate are now generally excluded from English Protestant Bibles but find a place in the Lutheran. They are still used in the public services of the Anglican Church. Subtract these books from the Vulgate list and the order of the books in the two Bibles will be found identical. Many minute differences, which cannot be noticed here, are found in the inner arrangement, but more particularly in the numbering of the contents of several books. Textual divergences, naturally, are the most numerous, but their extent and importance have been greatly exaggerated. The Canon remains the only really great difference.

Official Text of Vulgate.— The order of the Council of Trent, promulgated in 1546, that an official text of the Vulgate be printed, remained unfulfilled till the reign of Sixtus V (1585–1590). The attempts of previous pontiffs had led to little result. Sixtus summoned a commission of cardinals and scholars and entrusted them with the work; not content with this, he applied himself vigorously to the task, with more energy than critical acumen and with no scrupulous deference to the opinions of the commission. The edition, called after him the Sixtine, was completed and published in 1590, a few months before the death of the Pope. It was soon found to contain numerous errors, and all copies of it were recalled two years later by Clement VIII, who published a new and more correct text (1592). The Clementine Vulgate has ever since remained the official Bible of the Roman Catholic Church.

Sixtus V had prefixed a Bull to his edition, declaring that it must be held as "the true, lawful, authentic and undoubted" version of the Scriptures; he forbade anyone, under penalty of excommunication, to print a different edition of the Vulgate. This prohibition was also contained in the Clementine Bull. The effect of it was to put an end to the intolerable confusion of texts; indirectly, too, it is generally believed to have impeded the recovery of the true text of Saint Jerome. Some writers, Catholic and Protestant, have tried to extract from these Bulls a dogma of textual accuracy; this position is stultified by the action of Pope Clement, who recalled the "authentic" version of Sixtus and published another "authentic" version, differing from the former, it is said, in 3,000 places. The popes consider matters of discipline, but not of dogma, as subject to rectification. The action of Clement merely constitutes his edition the official Bible of the Church and guarantees its general trustworthiness and its freedom from doctrinal or moral error. The Clementine Vulgate, claimed to be better than any predecessor, but not to be perfect; it will probably give way itself to a more perfect version when modern scholarship shall have arrived at assured results.

Value of Vulgate Text.— Modern scholarship, however, is far from having settled the exact text either of the Old or of the New Testament and Jerome's version remains one of the best witnesses to the originals, though its value is not uniform throughout. His revision of the gospels, to quote Bishop Westcott, "represents the received Greek text of the 4th century, and so far claims a respect, speaking roughly, equal to that of a first-class Greek manuscript." Jerome, it should be remembered, sought out the best manuscripts of his day; the type of text he followed corresponds partly to that in greatest favor at present, partly to another now no longer known. His revision of the rest of the New Testament was not so thorough and probably let many inaccuracies remain; he himself in his commentary on the Galatians departs at times from the received Latin text.

In the Old Testament Jerome followed a text almost identical with the Massoretic, and, therefore, of the greatest value. His translation shows him to have been "a good, but by no means immaculate, Hebrew scholar." In general, his work was done with the greatest care

and light was constantly sought from learned Jews. Tobias and Judith, however, in whose canonicity he did not believe, were translated hurriedly. Almost all scholars would agree with the judgment of White, who says, in summing up this matter: "We may confidently assert that the general standard of the translation is a very high one."

Literary Qualities.— The language of the Vulgate was based upon the common conversational Latin of its day, used by all classes of the people; it differed greatly from the literary Latin and contained many words and forms considered archaic or rude. Despite the flavor which this origin frequently gives to the language of the Vulgate, the translation is greatly admired for its simplicity, clearness, flexibility, force and majesty. In the poetical and prophetic books it is unsurpassed. These fine literary qualities may be attributed to the genius of Jerome; yet they are present also in books which he did not touch. The Latin language, indeed, seems peculiarly adapted to render Hebrew thought and feeling; thus the Vulgate has ever been a favorite with literary men who love both the Bible and the language of Cicero, especially in continental Europe.

English Translations of the Vulgate.— The first English translation of the entire Vulgate is commonly attributed to Wyclif (d. 1384). The second is the work of Roman Catholic scholars in exile, who published the New Testament at Rheims, in 1582, and the Old at Douai, in 1609. The Rheims-Douai Version has remained ever since the Bible of English-speaking Catholics; passing through numerous editions, it has lost much of its original roughness and Latin phraseology and approached more closely to the King James Version. Scholars acknowledge its "anxious fidelity," whether in praise or blame, as well as its very great influence upon the interpretations and vocabulary adopted by the Authorized Version. See BIBLE; BIBLE, VERSIONS OF THE.

Bibliography.— White's lengthy article, 'Vulgate,' in Hasting's 'Dictionary of the Bible' (to which we are particularly indebted); also in same Dictionary, article, 'Latin Versions,' by Burkitt; Westcott, on Vulgate, in Smith's 'Dictionary of the Bible'; Kenyon, 'Handbook to Textual Criticism of New Testament'; 'Our Bible and the Ancient Manuscripts,' by the same; Gigot, 'General Introduction to the Scriptures'; Berger, 'Histoire de la Vulgate pendant les premiers siècles du moyen âge.' In Vigoroux, 'Dictionnaire de la Bible,' articles 'Jerome,' 'Latines Versions'; Kaulen, 'Geschichte der Vulg.' For fuller biography, consult White; also for list of Vulgate manuscripts. Consult also bibliography appended to article on the BIBLE.

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VULPIUS, vool'pē-oos, **Christian August,** German writer: b. Weimar, Germany, 23 Jan. 1762; d. there, 25 June 1827. He was educated at Jena and at Erlangen, and under the direction of his brother-in-law, Goethe, he was later secretary of the court theatre at Weimar. He was appointed first librarian and overseer of the cabinet of coins in the library at Weimar in 1797, a position he occupied until his death. He wrote numerous plays, romances, etc., which were popular in their day, but are now scarcely remembered with the exception of 'Rinaldo Rinaldini, der Räuberhauptmann' (1797), which has been translated into various languages, and widely imitated. He also edited 'Kuriositäten der physisch-literarisch-artistisch-historischen Vor-und Mitwelt' (10 vols., 1810–23), and 'Die Vorzeit' (4 vols., 1817–21).

VULTURE, any of various birds of prey which habitually feed on carrion. The vultures of the Old and New Worlds are quite distinct, the former constituting a family (*Cathartidæ*) already sufficiently described under the articles CARRON-CROW, CONDOR and TURKEY-BUZZARD; while the latter are much more nearly related to the hawks and eagles (*Falconidæ*), of which they are considered to be a subfamily (*Vulturinæ*) or to form an allied family (*Vulturidæ*). This group is distinguished by the possession of a strongly-hooked compressed bill; by short tarsi covered with reticulated or small polygonal scales. The middle toe is longer than the tarsus, and the hinder toe is a little elevated. The claws are blunt, but more or less hooked. The head and neck are frequently naked or covered with a light down. A large crop exists and the intestinal cæca and syrinx, wanting in the *Cathartidæ*, are present. There are numerous other differences in skeletal and other parts. The cinereous vulture (*Vultur monachus*) is distinguished by the presence of a ruff of feathers, and by the crest borne on the back of the head. It inhabits Europe, Asia and Africa, and is common. It may attain a length of three or four feet, and its color is a chocolate-brown with the naked head and neck blue. A long tuft of feathers springs from the base of the wings. The bird inhabits wooded situations and nests in trees as a rule, and appears to content itself with carrion, but rarely ventures to attack living animals.

The genus *Otogyps*, including the *O. calvus*, or Pondicherry vulture, and the *O. auricularis* or sociable vulture, is distinguished from the preceding genus by having a bare head and neck, with long wattles dependent from just below the head. The sociable vulture inhabits South Africa. It is colored a general blackish-brown, and its average length is four feet. The naked head and neck are light red. The Pondicherry vulture inhabits India, and is about three feet in length. Its head and neck are flesh-colored, and the chest bears a tuft of white feathers, the plumage generally being dark or blackish-brown. The genus *Gyps* is represented by the griffin or fulvous vulture (*G. fulvus*), and is distinguished by the bill being swollen or distended at the sides, the head and neck being covered with short down, and the neck possessing a ruff of long pointed or downy feathers. The griffin vulture inhabits Europe, Asia and Africa. It attains a length of four feet, and is of a general yellowish-brown tint, the tail and wing quills being black and the neck ruff white. The head is covered with white down. It is abundant about the Mediterranean countries, and builds its nest on cliffs. It is noted for its activity and great powers of flight. The Egyptian vulture (*Neophron*

percnopterus) inhabits south Europe, Egypt and Asia. It is white, the quill-feathers of the wings being dark brown or black, and the face, bill and legs chiefly yellow. It is of small size and trim build. This bird is also known under the designations of "Pharaoh's chicken" and "white crow," and is protected by laws from being injured. Besides carrion it devours all kinds of refuse left by the larger vultures and small reptiles, insects, etc. In the weak bill and some other respects the Egyptian vulture somewhat approaches the *Cathartidæ*. The celebrated lammergeier or bearded vulture (*Gypætus barbatus*), a genus and species distinguished from the preceding by the head and neck being feathered, and by the cere being concealed by bristly hairs, resembles the eagles in appearance and habits and is now generally considered as the representative of a subfamily (*Gypætinæ*) of the Falconidæ. (See LAMMERGEIER). Consult Dresser, 'Birds of Europe' (London 1881), and Blandford 'Birds of British India' (London 1895).

VYASA, vyä'sā ("the redactor or arranger"), also called Krishna, the author, according to tradition, of the Vedas, the Mahabhárata, the Puranas — of all ancient Sanskrit literature. It is evident that in this name is embodied the fact that these works have from time to time undergone recension. The name Homer has exactly the same meaning as Vyasa.

VYATKA, or **VIATKA,** vē-ā'kā, Russia, (1) a town, capital of the government of same name, advantageously situated near its centre in a beautiful district at the confluence of the Klinovka with the Vyatka, 250 miles west of Perm. Its houses are surrounded by gardens, and there are also public gardens. It has two cathedrals and also monasteries. There is steamer communication with Kazan. Pop. about 60,100. (2) The government is bounded on the north by Vologda, east by Perm, west by Kostroma and south by Kazan, has an area of 59,329 square miles. The chief river is the Vyatka, which joins the Kama, a tributary of the Volga. There are low hills, especially in the north, and forests of fir, oak, elm and birch are extensive. Flax and hemp are important crops and among the chief minerals are iron and copper, which are extracted and smelted. There are manufactures of woolen, linens, potash, leather, firearms, metal goods, etc. Pop. about 4,062,000.

VYAZMA, or **VIAZMA,** Russia, vē-âz'mâ, town of the division of Great Russia, government of Smolensk, on the Vyazma, 109 miles east-northeast of the town of Smolensk. It is mentioned first 1239, and, after being controlled successively by the Lithuanians and Poles, it finally became Russian 1634. Vyazma has active trade in grain, flax, hemp-seed, tallow, etc., and is the entrepôt for goods exported to Petrograd and Riga. Pop. about 13,000.

VYERNY, vyĕr'nĭ, Turkestan, capital of the district of Semiryetchensk, formerly in Russian territory. The city is situated at an altitude of about 2,500 feet above sea-level and is 2,700 miles southeast of Moscow. It dates from 1854 when it was founded on the site of an old Kirghiz colony. Earthquakes are frequent and several have proved disastrous especially that of 1887, in which over 330 perished. Pop. 36,400.

VYRNWY, a river of Wales, rising in the northwest of Montgomeryshire, and after a circuitous course of some 35 miles falling into the Severn on the Shropshire border. Lake Vyrnwy, not far from its source, the chief reservoir of the Liverpool waterworks, completed in 1892, was formed by constructing a huge dam across the river valley, a former glacial lake basin, the result being an artificial sheet of water about five miles long with an area of 1,121 acres and an available capacity exceeding 12,000 million gallons. The length of the embankment is 1,260 feet, its height 60, the length of the aqueduct to Liverpool 68 miles.

VYSHNY-VOLOTCHEK, vĭsh'nĭ-ē vo'lŏ-chĕk, Russia, capital of a commune in the district of Tver, in the neighborhood of the Tsna River Valley and 225 miles south by east of Petrograd. Cotton goods are manufactured to a considerable extent and there is a thriving trade. Pop. 17,600.

W

W the 23d letter of the English alphabet. It serves both as consonant and vowel; as consonant when it begins a word or syllable, and as vowel at the end of a word or syllable, where it forms a diphthong with a vowel preceding it, as in *how, grew.* Its sound is that of a weak-voiced bilabial formed by rounding the lips as for pronouncing *oo,* then contracting the aperture so that the voice issues with some friction. W is silent in many words and positions; examples: *gunwale, sword, two; wrap, wrong, wright.* W may be derived from primitive Indo-Germanic *v* or *gh.* Wh is usually derived from *kv.* Words beginning with *wh,* are pronounced as though the aspirate preceded, as indeed it did in written Anglo-Saxon: thus *whey, what* are sounded *hwey, hwat:* but there is a tendency both in Britain and the United States to drop the aspirate in such words or to minimize it, so that *when, what, white* become *w'en, w'at, w'ite:* nor is this mispronunciation restricted to the vulgar; it may be heard in the speech of the cultivated class; but it is a vice of speech parallel to that found among the lower-class Cockneys early in the 19th century, when they confounded *v* with *w,* saying *vile* for *while* and *wile* for *vile, varden* for *warden,* and so on. W is silent in the words *who, whom.* W in *whole* and in *whoop* is silent and intrusive, not existing in Anglo-Saxon *hal, hol,* nor in French *houper.* In German *w* is a consonant only and represents very nearly the sound of the English *v,* but is bilabial instead of labia-dental: hence the English forename Edward is in German written Eduard. The consonant sound of *w* in the Gothic languages is generally replaced in the Romance languages by *gu;* for example, *Walter, Gualtier, William, Guillaume, war, guerre.* Terminal *ow,* as in *sorrow,* is usually of guttural origin. The form (the letter *v doubled*) and the name of this consonant (double u) were both a true form and a right name in the 7th century when *w* first came into use. At that time — 13th century — and long after, the one character *v* (V) stood for the consonant *v* and the vowel sound *u* (*oo*), and its name was *oo;* at the same time it was used as the sign of the consonant now represented only by *v:* thus, while in form *w* is what it is called in French, *double vay,* or double ve, in sound it is for us what its name in English denotes, that of double u. W in chemistry is the symbol for tungsten. See U; V; ALPHABET.

WAAGEN, vä'gĕn, **Gustav Friedrich,** German art-historian: b. Hamburg, Germany, 11 Feb. 1794; d. Copenhagen, Denmark, 15 July 1868. He was educated at Breslau, Dresden, Heidelberg and Munich, in 1830 was appointed director of the picture gallery at the Museum of Berlin and he accepted the chair of history of art at the University of Berlin in 1844. His publications include 'Kunstwerke und Künstler in England und Paris' (3 vols., 1837–39); 'Kunstwerke und Künstler in Deutschland' (1843–45); 'Die Gemäldesammlung der kaiserlichen Eremitage in Saint Petersburg' (1864); 'Die vornehmsten Kunstdenkmäler' (1866–67), etc.

WAAHOO, or WAHOO. (1) A small tree (*Ulmus alata*) of the southern United States, having small ovate, often falcate, leaves and spreading branches, which form an open, rounded head. The branches have wide, wing-like corky ridges, which have suggested the name winged elm. The tiny samaras are edged with a silky fringe. The tree, while growing naturally in damp places, is a valuable roadside shade-tree, where it is hardy. It has a chocolate-colored fine-grained, heart-wood, which has been used in the South for wheel-hubs. (2) The spindle-tree (q.v.) (*Euonymus americanus*) is also called waahoo. (3) The burning bush (*U. atropurpureus*), a laxative American shrub, exhibiting bright scarlet pendulous capsules in the autumn. (4) The bearberry (*Rhamnus Purshiana*), common on the Pacific Coast of the United States, and the source of cascara sagrada.

WAAL, wäl, Netherlands, the Dutch name for the lower course of the Rhine, which enters the country a few miles southeast of Arnheim, flows through the province of Gelderland, to its confluence at Gorinchem with the Meuse, and thence continues westward through a many-channeled delta to the North Sea.

WABASH, wä'bäsh, Ind., city, county-seat of Wabash County, on the Wabash River and on the Cleveland, Cincinnati, Chicago and Saint Louis, and the Wabash railroads, about 90 miles northeast of Indianapolis and 45 miles west of Fort Wayne. It is in an agricultural and stock-raising region, but it has considerable manufacturing interests. The "Big Four" railroad shops are located here. The other manufactures are flour, paper, spokes, carriages, automobiles, motor trucks, furniture, tires, woolen goods, machine-shop products, wooden ware, baking powder, shoes and hats. There are railroad repair shops, lumber and coal yards. The principal public buildings are the Soldiers' Memorial Hall, Masonic Temple, Woman's Orphan Home and the county courthouse. There are three parks. The educational institutions are a high school, graded schools, Wabash City library, and a high school library. There are four banks and two daily newspapers. The first settlement was made in 1837 and the same year the town was incorporated. In 1866 it was

chartered as a city. The government is administered under the charter of 1866, which provides for a mayor, who holds office two years, and a council. Pop. about 8,723.

WABASH, a river which has its rise in Mercer County, in the western part of Ohio, flows west into Indiana, where it takes a generally western course to Logansport, then flows southwest to Covington in Fountain County, then nearly south past Terre Haute, to the Ohio River. For about 200 miles of its sinuous lower course it forms the boundary between Indiana and Illinois. The total length is about 600 miles. It is the largest tributary of the Ohio entering it from the north. The Wabash is navigable to Covington, about 300 miles, and when the water is high, to Lafayette. From Terre Haute to Huntington, the river is paralleled by the Wabash and Erie Canal which connects the river with Lake Erie.

WABASH COLLEGE, located at Crawfordsville, Ind. It was established by four Presbyterian missionaries in 1832, was first opened to students in 1833 and obtained a charter from the legislature in 1834; the present site of the college was purchased in 1835. Though affiliated with the Presbyterian Church the college is non-sectarian in control; the board of trustees number 21, of whom four are representatives of the alumni. Wabash is distinctively a small college aiming to give thorough college training but not to do technical or university work. It is not co-educational, in which respect it stands almost alone among the colleges of the West and Middle West. Formerly the college conferred three degrees, A.B., B.Ph. and B.S., requiring a thorough course in Greek for the A.B. degree. All college courses now lead to the single degree of A.B. The course includes 104 hours of prescribed work, and 84 hours elective. Special courses are arranged by which technical and professional courses may be shortened in certain approved schools. There is a fellowship in English, a students' loan fund and many prizes. A summer school under private control is conducted on the college grounds, work in which may count toward a degree. There is also a preparatory course. The college grounds contain 40 acres located in the heart of the city. On this campus are South Hall (occupied by the biological department and the museum), Centre Hall, the gymnasium, Peck Scientific Hall and Yandes Library Hall. The library contains over 51,000 volumes; the average annual attendance of students is 350.

WABASHA, Minn., city, county-seat of Wabash County, on the Mississippi River, and on the Chicago, Milwaukee and Saint Paul Railroad, about 65 miles southeast of Saint Paul. The southern end of Lake Pepin, an expansion of the Mississippi, is about two miles above the city. Wabash is in a fertile agricultural region, and has several manufactories, chief of which are flour and oatmeal mills, foundry, railroad shops, lumber mill, soap factory and a church furniture factory. Grain and livestock are shipped by water. There are banks and newspapers. Pop. about 2,622.

WACCAMAW, a tribe of North American Indians who, in the 18th century, lived on Waccamaw River of eastern South Carolina. They are last mentioned in 1755, after which date, it is supposed, they became incorporated with the Catawbas.

WACCAMAW, a river which has its rise in the southeastern part of North Carolina, and is the outlet of Waccamaw Lake. It flows south into South Carolina and joins the delta of the Great Pedee on the southern boundary of Horry County. Below the confluence of the rivers, the stream is often called Waccamaw. It enters the ocean through Winyah Bay. From the source of the Waccamaw to the Great Pedee is about 130 miles.

WACE, wās, an Anglo-Norman poet: b. Island of Jersey, about 1115; d. about 1184. His Christian name is generally believed to have been Richard or Robert. He was patronized by Henry II of England, who made him a canon of Bayeux, Normandy. Two important works by him remain, the 'Brut d'Angleterre,' and the 'Roman de Rou,' a history of Rollo and the dukes of Normandy, including the conquest of England.

WACE, wās, **Henry,** English Anglican clergyman: b. London, 10 Dec. 1836. He was educated at Marlborough, Rugby, King's College, London and Brasenose College, Oxford. He served curacies at Saint Luke's, Berwick Street, London, 1861–63, and Saint James', Piccadilly, 1863–69, and Grosvenor Chapel, 1870–72, was chaplain of Lincoln's Inn, 1872–80 and preacher there, 1880–96. He was professor of ecclesiastical history in King's College, 1875–83, in 1881 became a prebendary of Saint Paul's, and in 1883 chaplain to the Archbishop of Canterbury and principal of King's College. He was Boyle lecturer ('Christianity and Morality') (1874–75) and Bampton lecturer ('The Foundations of Faith') (1879), but is best known as joint editor with Sir W. Smith of the great 'Dictionary of Christian Biography' (1877–87), and is himself, the editor of the 'Speaker's Commentary on the Apocrypha' (1886). His latest works are 'Prophecy, Jewish and Christian' (1911); 'Some Questions of the Day' (1914).

WACHSMUTH, Charles, American paleontologist: b. Hanover, Germany, 1829; d. 1896. Abandoning a legal education because of ill health, he came to America and settled in Burlington, Iowa (1854). He made important studies among the crinoids of the Burlington limestones. His 'North American Crinoidea Camerata' (1897), was published posthumously.

WACHUSETT, wâ-chū'sĕt, **Mount,** an isolated peak in Worcester County, Mass., seven miles southwest of Fitchburg. The altitude is 2,018 feet, and the view from the summit, embracing a picturesque valley and several small bodies of water, is most beautiful.

WACKE, wakay, German miner's term for a soft, earthy variety of trap-rock of grayish-green color, resembling indurated clay, and readily crumbling down when exposed to the weather. It is a sedimentary rock of basaltic or trap material; is often vesicular, and when the cavities are filled it becomes an amygdaloid.

WACO, wā'kō, a subtribe of the Wichitas (q.v.). Sometimes written Hueco.

WACO, Tex., city and county-seat of McLennan County, on the Brazos River at the mouth of the Bosque, and on the San Antonio and Aransas Pass, the Missouri, Kansas and

Texas, the International and Great Northern, the Houston and Texas Central, the Texas Central, and the Gulf, Colorado and Santa Fé railroads, 60 miles east of the geographical centre of the State, and 94 miles north by east of Austin and 85 miles south by west of Dallas. Waco is in a fertile agricultural region in which grain and cotton are the chief products. The chief manufactures are cotton products, printing plant products, men's clothing, wagons and carriages, watches, foundry and machine-shop products, saddlery and harness and mineral and soda waters. The city is the principal interior cotton market of the State and is the great distributing centre between Austin and Dallas. It is well laid out, with fine broad streets, of which 75 miles are permanently paved, while the others are paved with macadam and gravel. Fourteen hard-surfaced macadam roads connect the city with the smaller neighboring towns. It has an excellent sewage system with over 100 miles of mains. The waterworks are owned by the municipality. There are a number of artesian wells. A tubular well system furnishes daily 2,000,000 gallons of water. There are 12 parks comprising 355 acres of which Cameron Park (130 acres) is the principal and among the most beautiful in Texas. Waco is noted for its healthfulness, cool in summer, mild in winter. Several bridges span the Brazos River. The principal public buildings are the government building, county courthouse, churches, schools, banks the Carnegie library, Masonic temple, the Amicable building, the highest in the Southwest, the Hotel Waco, Hotel Raleigh and the Texas Cotton Palace, wherein is held an annual exhibition of the superior products of agriculture, horticulture, stock-raising, textile industries, etc. The city has hospitals, sanatoriums and an orphans' home.

There are nine banks, five of which are national. The combined capital is $2,663,000 with deposits aggregating $15,000,000. There are 62 churches, representing nearly all denominations. The educational institutions are 29 in number, 17 of which are public schools and the remainder private, such as Baylor University, the Academy of the Sacred Heart, Paul Quinn College, Central Texas College, Saint Basil's College, Providence Training School, etc. There are two business colleges, which have a high standing, and several school libraries. The municipal receipts and expenditures are about $500,000. The chief items of expense are the schools and the interest on the bonded and floating debt. The total tax rate (city, county, State, special road) was $2.85⅓ in 1917 assessed on valuation of 65 per cent in the city.

The site of Waco was selected, long before the advent of the white man, as a camp-site by local tribes of Indians on account of the abundant springs and the natural protection afforded from storms, cyclones, etc. The Indians named the site Huaco, which the whites corrupted to Waco. It was surveyed as a town in 1849 and incorporated in 1850. Its growth in population has been steady and has more than kept pace with the growth in commerce. The rich surrounding country furnishes raw products sufficient for the support of a large manufacturing and commercial city. Waco has a commission form of government. In 1917 the McArthur army training camp, covering 15,000 acres, was established to the west and northwest of the city, while to the south was constructed the Rice Flying Field for the training of army aviators. Pop. 49,289.

WAD, a soft black mineral, consisting chiefly of the oxides of manganese, MnO_2 and MnO, but with varying percentages of one or more other metallic oxides and also water. Several permanent varieties and many minor varieties have been named, thus "bog manganese" contains iron, silica, alumina and baryta besides the usual much larger percentage of the manganese oxides and water. Asbolite or "earthy cobalt" contains oxide of cobalt up to 32 per cent. Lampadite contains from 4 to 18 per cent of oxide of copper. Wad frequently occurs in loosely aggregated masses which thus seem very light, but its specific gravity rarely falls below 3, and is sometimes as much as 4.26. Though usually so soft as to soil the fingers, its hardness may be as high as 6. Besides the common amorphous form, reniform masses and incrustations are frequently found, while beautiful arborescent infiltrations of wad occur in seams of quartz and other minerals (see Fig. 12 under MINERALOGY). Wad and the closely related mineral psilomelane are important ores of manganese and occur abundantly in very many localities.

WADAI, wä-dī', or **WADAY,** French Equatorial Africa, an extensive and semi-civilized negro state in Central Sudan, between Kanem and Bagirmi in the west and Darfur in the east. In 1899 it was recognized as within the French sphere of influence, and in 1903 a French protectorate was established. In 1911 a French force occupied Arada, a few miles north of Abeshr, the capital, and in 1913 Ain Galakka. With dependencies its area is estimated at 170,000 square miles and its population at about 1,000,000. It consists principally of an elevated plateau, very fertile in some parts, producing abundantly maize, millet, indigo, cotton, etc. Ivory and slaves are also largely dealt in. The inhabitants were warlike, and exercised tributary rights over several neighboring settlements; their aggressive policy was somewhat checked by the Mahdi who inflicted a crushing defeat on the sultan of Wadai's forces in November 1888. This sultan, Brahim, was deposed in 1901 and succeeded by Sultan Abugazali. The kingdom of Wadai dates from 1635. The prevailing religion is Mohammedan. Capital, Abeshr, which has caravan communication with Benghazi, on the coast of Tripoli.

WADDEL, James, Presbyterian clergyman: b. Newry, Ireland, July 1739; d. 17 Sept. 1805. With his parents he settled in Pennsylvania while yet a child. Waddel was educated in Nottingham, Pa.; was licensed to preach 1761, and removing to Virginia was pastor of Presbyterian churches 1762–75, and then became a planter in Louisa County, Va., and conducted a classical school, preaching on occasion. Two years later he became blind, but continued and even multiplied his labors. His fame as a preacher was great and widespread, as appears from William Wirt's sketch of the man and his manner in 'The British Spy.' President Madison declared that Waddel "spoiled him for other preaching."

Patrick Henry named him as one of the two greatest orators he had ever heard.

WADDELL, wŏd-dĕl', **James Iredell,** American naval officer: b. Pittsboro, N. C., 13 July 1824; d. Annapolis, Md., 15 March 1886. He was appointed midshipman in the United States navy in 1841, became lieutenant in 1855 and in 1861 resigned his commission in order to join the Confederate navy the next year. He was engaged in the repulse of the Union forces at Drewry's Bluff, James River, Va., was sent to England by the Confederate government in 1863 and in 1864 took command of the *Shenandoah,* with which he began a piratical cruise against the commerce of the United States which lasted 13 months. He carried the Confederate flag around the world, captured 38 vessels and sailed under the Confederate flag for six months after Lee's surrender. He then turned his ship over to the British government which in turn transferred it to the hands of the United States consul at Liverpool. After residing abroad for several years Waddell returned to the United States and in 1875 became a commander in the service of the Pacific Mail Steamship Company.

WADDELL, John Alexander Low, American engineer: b. Port Hope, Ontario, 15 Jan. 1854. He was graduated from Rensselaer Polytechnic Institute in 1875, and in 1876–77 was engaged in engineering work on the Canadian Pacific Railway. He was assistant professor of rational and technical mechanics at the Rensselaer Institute in 1878–88, and in 1882–86 was professor of civil engineering at the Imperial University of Japan. Since 1887 he has been engaged as a consulting bridge engineer. He is a member of various American and foreign societies, and in 1888 was decorated by the emperor of Japan, Knight Commander of the Order of the Rising Sun. He was also decorated by the Grandduchess Olga of Russia for his services as principal engineer of the Trans-Alaska-Siberian Railway. He has published 'Designing of Ordinary Iron Highway Bridges' (1884); 'A System of Iron Railway Bridges for Japan' (1886); 'De Pontibus' (1898); 'Specifications for Steel Bridges' (1900); 'Engineering Specifications and Contracts' (1907); 'Nickel Steel for Bridges' (awarded Norman Medal 1909, of American Society of Civil Engineers); 'Alloy Steel for Bridgework'; 'Bridge Engineering' (2 vols., 1916). With Harrington, J. L., he edited 'Addresses to Engineering Students' (1911); and a compilation of 22 of his professional papers, edited by Harrington, J. L., was published (1905).

WADDING, wŏd'ĭng, **Luke,** Irish Franciscan friar: b. Waterford, Ireland, 16 Oct. 1588; d. Rome, 18 Nov. 1657. After studying theology at the Lisbon Jesuit Seminary he entered the Franciscan Order in 1605, and became professor of divinity in the University of Salamanca. He went to Rome in 1618, where he founded the Irish Franciscan College of Saint Isidore (1625), served as papal councillor in the controversy with the Jansenists, whose tenets he held at first, but presently renounced; and was procurator of his order (1630–34). He wrote 'Annales Ordinis Minorum' (1626–40; new ed., 24 vols. 1731–47); 'Scriptores Ordinis Minorum' (1660; new ed., 1806); and edited Calasio's posthumous 'Biblical Concordance' (1621) and the works of Duns Scotus (1620).

WADDINGTON, wŏd'ĭng-tŏn, **George,** English educator: b. Tuxford, England, 7 Sept. 1793; d. Durham, England, 20 July 1869. He was educated at Trinity College, Cambridge, and received a fellowship there in 1818. He traveled in foreign countries for several years, was appointed commissary and official of prebend at Masham in 1833; was prebendary of Ferring, Chichester Cathedral, in 1833–41; and from 1840 until his death was dean of Durham. His writings include 'Journal of a Visit to Some Parts of Ethiopia' (1822); 'A Visit to Greece in 1823 and 1824' (1825); 'History of the Church from the Earliest Ages to the Reformation' (1833); 'History of the Reformation on the Continent' (1843), etc.

WADDINGTON, Samuel, English poet: b. Boston Spa, Yorkshire, 9 Nov. 1844. He was educated at Brasenose College, Oxford, became a contributor to the leading English journals and reviews, and besides editing several anthologies, such as 'English Sonnets by Living Writers' (1881), and 'Sonnets of Europe' (1886), published also 'A. H. Clough: A Monograph' (1883); 'Poems' (1896); and 'Collected Poems' (1902); 'Chapter of My Life' (1909); 'Some Views respecting a Future Life' (1917).

WADDINGTON, Fr. vä-dăñ-tôñ, **William Henry,** French statesman and diplomat: b. Saint Remi-sur-l'Avre, Eure-et-Loir, 11 Dec. 1826; d. Paris, 13 Jan. 1894. He was educated at Trinity College, Cambridge, England, for some years devoted his attention to archæological research, was admitted in 1865 to the Académie des Inscriptions et Belles-Lettres, and did not enter politics until he stood unsuccessfully for the department of the Aisne in 1865 and 1869. Minister of Public Instruction in the extremely short-lived Cabinet of Dufaure, 19–24 May 1873, he was elected senator for the Aisne in 1876 and was again Minister of Public Instruction in 1876–77. In December 1877 he received the portfolio of Foreign Affairs, in 1878 took a distinguished part in the Congress of Berlin, and 4 Feb. 1879 became Prime Minister. His delay in the matter of needed reforms lost him the support of all parties, and he retired 27 December. He held the London embassy in 1883–93. His writings include editions of the edict of Diocletian (1864) and Le Bas' 'Voyage Archéologique' (1867–77); an essay on 'The Protestant Church in France' (in 'Cambridge Essays' 1856), and 'Mélanges de Numismatique et de Philologie' (1861). Consult Mme. Waddington, 'Letters of a Diplomat's Wife' (1906).

WADE, wād, **Benjamin Franklin,** American lawyer and political leader: b. near West Springfield, Mass., 27 Oct. 1800; d. Jefferson, Ohio, 2 March 1878. In 1821 he went to Ohio, where after spending a few years in farming he took up the study of law, was admitted to the bar in 1827, and in 1831 formed a partnership with Joshua R. Giddings (q.v.), and built up a large practice. In 1837 he was elected to the State senate as a Whig, where he procured a resolution against the annexation of Texas; he also opposed the Kentucky Slave Bill, and on this account failed of re-election in 1839; but was again elected in 1841. He took active

part in the campaign of 1840, and in 1847 was elected the presiding judge of the Third Judicial Court of Ohio, where he acquired high standing as a jurist. In 1851 he was elected to the United States Senate, and re-elected in 1857 and in 1863, thus serving throughout the Civil War. He was a most vigorous opponent of slavery, voted to repeal the Fugitive Slave Law and in opposition to the Kansas-Nebraska Bill. As an orator, he was forceful, carrying conviction by his sincerity. After the election of Lincoln in 1860, he opposed any compromise between the North and the South; from 1861–62 was chairman of the joint committee on the conduct of the war, and advocated a vigorous policy and the immediate emancipation of the slaves. In 1864 he opposed the policy of the President and moderate Republicans in regard to Reconstruction, and with Senator Davis issued the Wade-Davis manifesto strongly criticising the President's policy. He advocated wholesale confiscation of Confederately-owned property in the North, the arming of the blacks and execution of Southern leaders. He was elected president pro tempore of the Senate, and was thus acting Vice-President of the United States in 1865, after Lincoln's assassination. He was criticized for voting for Johnson's impeachment, which if accomplished would have resulted in his own elevation to the Presidential office; but after the excitement had subsided, even his opponents were convinced of his disinterestedness. His ability in debate, fearlessness and honesty gave him a leading position in the Senate and commanded the respect of his associates. Consult Riddle, 'Life of Benjamin F. Wade' (1886).

WADE, James Franklin, American officer: b. Jefferson, Ohio, 14 April 1843. Educated in the common schools of his time, he entered the Union army as first lieutenant, Sixth United States Cavalry (14 May 1861), became colonel of the Fifth cavalry (1887) and was major-general of volunteers (1898), serving in the war against Spain, and was head of the Cuban evacuation commission. He became military governor of Cuba (1899), was promoted major-general of the United States army (1903) and succeeded General Davis in command of the division of the Philippines (1903–04). He became commander of the Atlantic division (1904–07) and in the latter year he retired.

WADE, Sir **Thomas Francis,** English diplomatist: b. London, 25 Aug. 1818; d. Cambridge, 31 July 1895. He studied at Trinity College, Cambridge; entered the army in 1838; in 1841 was promoted lieutenant in the 98th regiment, detailed for service in China; and was successively interpreter at Hongkong and vice-consul at Shanghai. From 1861 to 1871 he was a member of the British legation at Peking and from 1871 to 1883 Ambassador there. In 1868 he married Amelia, a daughter of Sir John Herschel. In 1888 he was made the first professor of Chinese at Cambridge University. His large and important Chinese library is now in the possession of that institution. He published 'The Peking Syllabary' (1859); 'Yü-yen Tzŭ-erh Chi: A Progressive Course in Colloquial Chinese' (1867); and other standard works on China and the Chinese.

WADELAI, wä-dĕ-lī, central Africa, a military post in the equatorial province of the Egyptian Sudan, on the Nile not far below the Albert Nyanza. It is on the Uganda telegraph line and was famous as the chief station of Emin Pasha (q.v.), governor of the province, who, after the Mahdist rising, was cut off from civilization and who was relieved by Stanley.

WADESBORO, wādz'bŭr-ō, N. C., town, county-seat of Anson County, on the Seaboard Air Line and the Atlantic Coast Line railroads, about 100 miles southwest of Raleigh and 50 miles southeast of Charlotte. It is in an agricultural region in which the chief products are cotton and tobacco. The principal buildings are the county courthouse, the Anson School Institute, opened in 1854, and the churches and schools for both races. There are two newspapers and two banks. Pop. about 2,376.

WADHAM (wŏd'ạm) **COLLEGE,** Oxford University, England, was founded in 1610 by Dorothy, widow of Nicholas Wadham of Mayfield, Somersetshire, England, for a warden, 15 fellows, 15 scholars, two chaplains and two clerks. One of the fellowships was diverted in 1857 to the endowment of the chair of experimental philosophy. The scholarships have an annual value of $400 and are tenable for five years; and there are besides 10 Hody exhibitions (six Greek, four Hebrew) of $250, two Wright exhibitions (1874) for scholars of Manchester Grammar Schools, etc. Wadham College presents to 12 livings. The 17th century college buildings and the college garden are attractive features; the library is rich in rare Spanish books. Among Wadham's distinguished alumni are Admiral Blake, Sir Christopher Wren and Frederic Harrison.

WADI, wä'dē, or **WADY** (Arabian, "ravine"), in Palestine and Arabia, either a river or river valley, or the basin of a torrent. Renan thinks this word was adopted by the Greeks and corrupted into oasis. It has passed into the Spanish guad, with which many of the Spanish river names begin; thus Wadi-l-Kebir (Arab. "great river") appears as Guadalquiver, Wadi-l-hajarah ("river of stones") as Guadalaxara. The ravines of Malta commonly go by the name of vyed or wied, a corrupted form of wadi.

WADLEIGH, George Henry, American naval officer: b. New Hampshire, 28 Sept. 1842. He was graduated from the United States Naval Academy in 1863 and was assigned to blockade duty with the West Gulf squadron, serving until the close of the war. He was commissioned master in 1865, commander in 1880, served on the Arctic expedition in search of the *Jeannette* in 1881, was promoted captain in 1894 and in 1895–97 was in command of the *Minneapolis* on the coast of Asia Minor, engaged in the protection of American missionaries. He commanded the flag-ship *Philadelphia* in the Pacific station during the Spanish War and after the conclusion of peace was in command of the *Wabash* at the Boston navy-yard. In 1902 he was promoted rear-admiral and was retired the same year.

WADLIN, Horace Greeley, American statistician: b. Wakefield, Mass., 2 Oct. 1851.

He studied architecture in Salem and in Boston, Mass., and in 1875–79 was engaged in the practice of that profession in the latter city. He was appointed special agent for the Massachusetts Bureau of Statistics of Labor in 1879 and upon becoming its chief in 1888 abandoned his professional practice. He resigned this position in 1903 to accept the post of librarian at the Boston Public Library, which he has since occupied. He was a member of the Massachusetts legislature in 1884–88, was supervisor of the United States census in 1890 and in 1900 and also of the Massachusetts census of 1895. He has published 'Reports on Statistics of Labor of Massachusetts' (14 vols., 1888–1901); 'Annual Statistics of Manufactures of Massachusetts' (16 vols., 1888–1901); 'Decennial Census of Massachusetts' (7 vols., 1895), etc.

WADSWORTH, wâdz'wĕrth, **James,** American soldier: b. Durham, Conn., 6 July 1730; d. 22 Sept. 1817. He was graduated at Yale 1748. He was brigadier-general of Connecticut militia 1776; was commissioned major-general 1777, and ordered to New Haven, there to organize the defense of the coast towns. He was later chosen judge of the Common Pleas of New Haven County; was delegate to the Continental Congress 1783–86, and member of the executive council 1785–90.

WADSWORTH, James, American educator: b. Durham, Conn., 25 April 1768; d. 8 June 1844. He graduated at Yale 1787. In 1790, in company with his brother William, he removed to the Genesee Valley, western New York, and through the rise in value of land, large quantities of which they had purchased, he became one of the richest landholders in the State. He gave much effort and much money to advance popular education, publishing and circulating, at his own expense, works on this subject, and employing lecturers to speak on it. As early as 1811 he recommended the establishing of normal schools, and 1838 procured the enactment of the New York School Library Law. He founded and liberally endowed a library and scientific institution at Geneseo. In selling his land he always stipulated that two tracts of 125 acres each, in every township, should be given, one for the support of a school and the other for a church. He died at Geneseo.

WADSWORTH, wŏds'wĕrth, **James Samuel,** American soldier: b. Geneseo, N. Y., 30 Oct. 1807; d. 8 May 1864. He was educated at Hamilton College, Harvard and Yale, though he was not graduated from any one of these institutions; studied law with Daniel Webster, and was admitted to the bar in 1833. He did not, however, practise his profession, his attention being given to the management of his extensive estates in western New York. He enlisted as a volunteer in the Union army early in 1861; was appointed a brigadier-general in August of that year; and became military governor of the District of Columbia in March 1862. In that year also he was the Republican candidate for governor of New York, but was defeated by his opponent, Horatio Seymour (q.v.). He was engaged in the battles of Fredericksburg, Chancellorsville, Gettysburg and the Wilderness as commander of a division and was mortally wounded in the last-named battle, dying two days later.

WADSWORTH, James Wolcott, Jr., American legislator: b. Geneseo, N. Y., 12 Aug. 1877. He was graduated at Yale in 1898. The Spanish-American War was in progress at the time of his graduation whereupon he enlisted in Battery A, Pennsylvania Light Artillery, which was one of the batteries of General Grant's brigade during his campaign in Porto Rico. On the conclusion of the war Private Wadsworth was discharged from the volunteer army but early in 1899 made a voyage to the Philippines while the war was in progress and later made a tour around the world. He came home and immediately took charge of his father's livestock business at Mount Morris in 1899 and managed a ranch at Paloduro, Tex., 1911–13. He was elected member of assembly from Livingston County (1905–10) and was speaker of the house (1906–10). He was delegate to the National Republican Convention of 1908, 1912 and 1916 and was elected United States senator for the term 1915–21, by a handsome majority, receiving 639,112 votes against 571,010 for his Democratic opponent. He is a member of the Loyal Legion, the Spanish War Veterans, the Grange and numerous organizations and clubs.

WADSWORTH, Peleg, American revolutionary soldier: b. Hiram, Oxford County, Me., 1748; d. 18 Nov. 1829. Having graduated at Harvard, he was first a schoolmaster, then a merchant. At the outbreak of the Revolutionary War he was made captain of a company of minute-men. He was later appointed adjutant-general for Massachusetts; was present in the battle of Long Island; was commissioned brigadier-general of militia 1777; was second in command in the Penobscot Expedition 1779, and was taken prisoner; after release he was again captured in his house by British soldiers and held prisoner at Castine, Me., February–June 1781, when he escaped. He was elected member of the State senate of Maine 1792, and representative in Congress 1793–1807. Congress granted him a large tract of land in Oxford County, Me., in recognition of his military services; he settled on this land after retiring from Congress, and greatly developed its resources.

WADSWORTH, Ohio, village in Medina County, on the New York, Pennsylvania and Ohio Railroad, about 30 miles south of Cleveland and 12 miles southwest of Akron. It was settled in 1816 and in 1865 was incorporated. It is in an agricultural region in which tobacco is one of the important vegetable products. In the vicinity are large beds of coal, valuable sandstone quarries and extensive deposits of fire-clay. There are also deposits of clay and ochre. The chief manufactures are door and window screens, wagons and carriages, steam injectors, flour and machine shop products. There are eight churches, a normal school, graded public schools and a library, two banks and a newspaper. Pop. about 3,073.

WADY-HALFA, wä'dē-häl'fä, Egypt, the capital of a second-class district in the Sudan, on the east bank of the Nile, one mile below the second cataract and at the junction of the branch lines of the military railroad to Khartum

and Kerma. Its notable features are two ancient temples. Pop. with suburbs about 3,200.

WAFER, (1) a thin circular cake of unleavened bread, generally stamped with the Christian monogram, the cross, or other sacred symbol and used in the Roman and several other churches in the administration of the Eucharist. (2) Originally, a small disc of dried paste, now a disc of gummed paper, used for sealing letters, etc.

WAGER, a promise to pay (money or the like), dependent on some event or disputed fact or circumstance; a bet. It is retroactive, working both ways, for the bettor receives in return a promise of a thing esteemed of like value, should his intention prove to be correct. It is a contract of honor, being unrecognized by the law. By statutes of England and the United States, all contracts or agreements, whether by parole or in writing, depending on wagers, are null and void, and money due thereon cannot be recovered in any court of law. Insurance is not regarded as a wager, however, because it is legitimate in business. See GAMBLING; HORSE-RACING.

WAGER, or WAGERING, POLICY, in insurance law, a pretended insurance, in which the insured possesses no legal interest in the subject matter of the insurance or the risk insured against. Therefore, it is really a wager between insurer and insured that the uncertain event referred to will or will not take place. The "stakes" of the insurer are represented by the sum insured; those of the insured, the paid premium. See INSURANCE.

WAGES. Wages are the remuneration of labor, either mental or physical. This remuneration includes not simply that which is paid by one man to another in the form of wages, but that which a man earns with his labor even when he works for himself. In short, it is that quantity of wealth which comes to one during a given period of time because of the exercise of his own powers, physical and mental. It does not include that which comes to him as the result of labor previously performed by himself or others or which comes to him through the ownership of capital or land, though the return which he receives at a given period for capital which he himself had previously accumulated might conceivably be called deferred wages for his previous labor and thrift.

There have been some objections to calling labor a commodity and wages the price of a commodity. Whether labor be a commodity or not, there can scarcely be any doubt that the wages of labor have some features in common with the prices of commodities. A kind of labor which is very intensely desired or needed will generally command a high wage, just as a commodity which is intensely desired or needed will command a high price. In both cases, however, the desire or need must be somewhat specific. It is not enough to say that air is very much desired or needed in the sense that we could not get along without it. It is not intensely desired or needed in the sense that we ordinarily want more than we have got. Similarly it is not enough to say that a given class of unskilled labor is intensely desired or needed in the sense that we could not get along without it. It sometimes happens that a given class of unskilled labor is not intensely desired or needed in the sense that we do not need any more than we have got, or at least do not need it with any great degree of intensity.

The problem of wages is one of the most acute of our social and economic problems because on this problem depends the problem of poverty. Poverty must, however, be distinguished from dependence, which may result from injury, incapacity or a variety of causes. Poverty in a general sense results only from low wages. There can be said to be poverty in a community when there are considerable numbers of laborers capable of working who cannot sell their labor at a high price or for good wages. Until this situation can be removed no community is free from reproach. Until it can create conditions under which every one who is capable of working can sell his labor at a good price or can command good wages for his labor, it will not have solved the problem of poverty. It may cover up the problem by decreeing high wages, or by taking something from one class of people in order to pay it to another class. This is obviously no cure and is certain in the course of time to bring about worse conditions than those which it is designed to cure. The only real and permanent cure is the creation of such conditions as will enable every normal laborer, without government interference or compulsion of any kind, to sell his labor on the open market at a good price, or to command high wages for his labor under the normal operation of the laws of demand and supply. So long as it remains true that an employer of labor need not take any trouble to find help, but can merely take his pick among the numerous applicants for jobs, the forces of demand and supply are working to the disadvantage of that class of labor. The reproach of poverty cannot be removed until the opposite symptoms show themselves, that is, until the average laborer never has to look for a job, but can take his pick among several jobs which are offered.

There need not be the slightest difficulty in bringing about this condition. A proper redistribution of human talent which will multiply the number of employers, either actual or potential, and diminish the number of laborers, especially of the unskilled or ignorant sort, will ultimately bring about the right condition. If we could double the number of employers looking for men and halve the number of men looking for employers, we should very materially changed the relation of supply and demand. Each laborer would then be able not only to get good wages but take his pick among the jobs offered. He would not need any social legislation to protect him because he could then dictate his own terms, not only as to sanitary and social surroundings, but also as to all the conditions of employment. So long as he is dependent upon governmental authority to protect him against undesirable conditions of labor, he is not really a free man. His real freedom will be achieved when the forces of the open market enable him to take care of himself.

The necessary redistribution of skill and talent may be brought about in a variety of ways, or by the concerted pursuit of a program working in many directions. First and foremost should be mentioned, of course, an efficient educational system which should make

ignorance and lack of skill to disappear and with them ignorant and unskilled labor. It should greatly multiply the number of persons capable of entering those occupations where men and women are now scarce. This in itself would tend to double the number in the employing classes and halve the number in the unskilled classes. However, the beneficent effects of such an educational system might easily be counteracted in any community by the importation of masses of ignorant and unskilled laborers. A very careful selection of immigrants would be absolutely essential as a supplement to the educational system. There should, of course, be no restriction upon immigration of people who are capable of entering those occupations where men and women are scarce. In fact, every encouragement should be offered to immigrants who are capable of entering the employing classes, but there should be an absolute exclusion of those who are only capable of entering the ignorant and unskilled classes.

Even with a beneficent educational system and a selective immigration policy, the beneficent effects on the distribution of talent and of wealth might be in part counteracted by what is sometimes called selective birth rate. If the people who regularly enter the more well-paid occupations should continue to marry late and have small families, while the people in the poorly paid occupations marry early and have large families, this itself would tend toward a bad distribution of skill and talent, thinning people out at the top and thickening them at the bottom. This, however, is the most difficult phase of the whole question to handle. It is not difficult to construct an educational system or a selective immigration policy, but the problem of increasing the birth rate among the intellectual classes and decreasing it among the unskilled and ignorant classes seems well-nigh insoluble. Probably nothing except a superior kind of moral teaching which will increase the family-building ambition and diminish the spawning tendency is the only effective remedy.

THOMAS N. CARVER.

WAGNER, Charles, French Protestant leader: b. Wibersville, Alsace, 3 Jan. 1852; d. 12 May 1918. At the age of 14 he was sent to Paris to school; was graduated at the Sorbonne in 1869; and studied theology at Strassburg and Göttingen. He was the pastor of a small parish in the French province of Vosges until 1882, when he went to Paris, and there opened a Sunday-school and later began preaching. The publication of his book 'Jeunesse' ("Youth") in 1891 marked him as a leader in the ethical movement in France and his influence continually increased. Besides serving as pastor to a large congregation, he took an active part in many philanthropic and charitable undertakings, and in this work came into cordial relations with men of all shades of religious belief. His other publications translated into English include 'The Soul of Things'; 'By the Fireside'; 'The Better Way'; 'The Simple Life'; 'On Life's Threshold' (1905). Of these 'The Simple Life' attracted particular interest in the United States and was widely commended by religious and ethical leaders. In the fall of 1904 Pastor Wagner visited the United States, where he made numerous addresses and gained material for 'My Impressions of America' (1906).

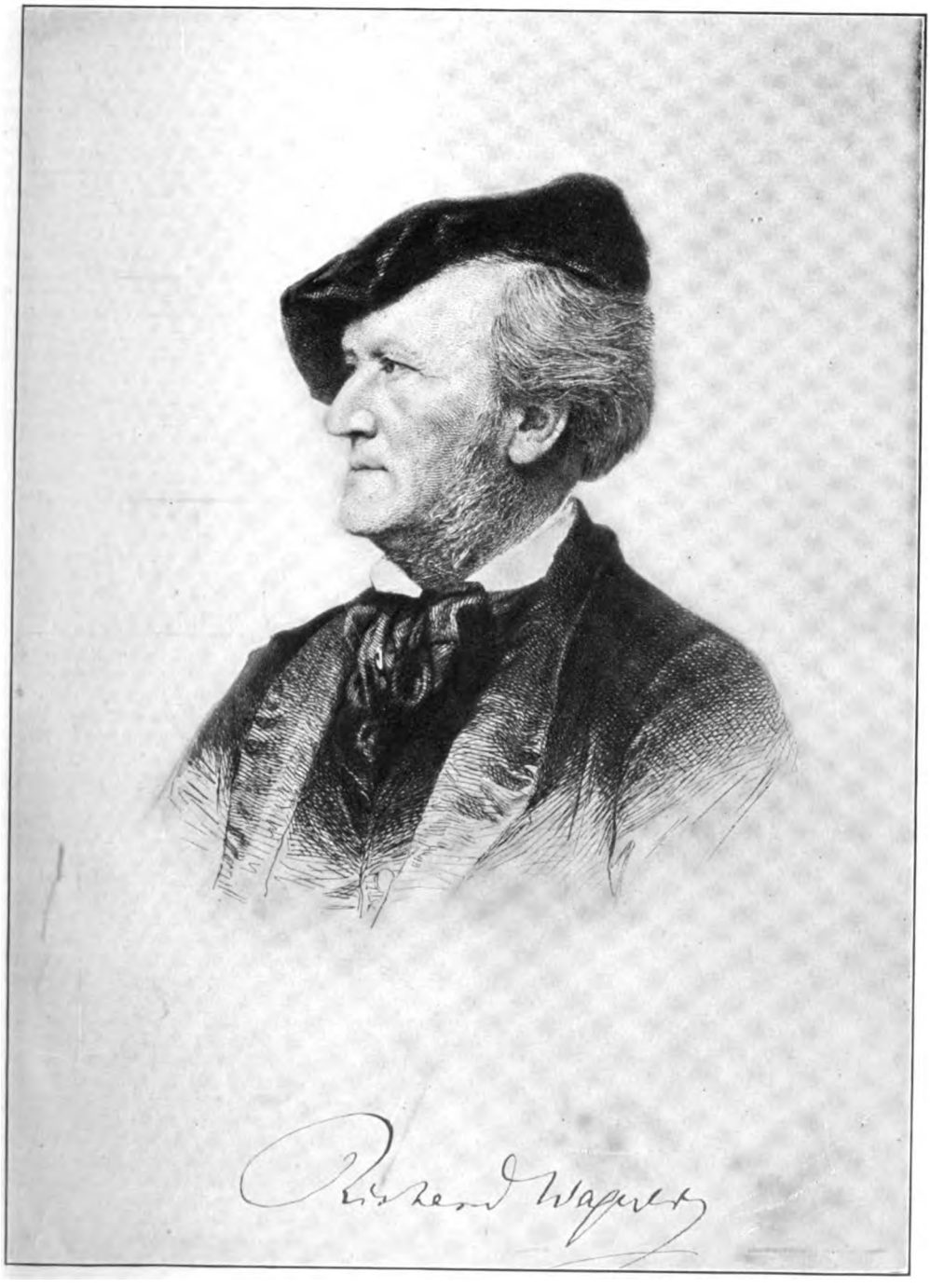
WAGNER, vāg'nĕr, **Moritz,** German naturalist: b. Baireuth, 3 Oct. 1813; d. Munich, 31 May 1887. He studied at Erlangen and Munich and made extensive scientific journeys in 1852–55 through North and Central America and the West Indies; in 1857–60 through the Andes from Panama to Ecuador. He was made professor of geography and ethnology at Munich. Among his writings are 'Travels in the Regency of Algiers' (1841); 'The Caucasus and the Land of the Cossacks' (1847); 'Journey to Colchis' (1850); 'Journey to Ararat and the Armenian Highlands' (1848); 'Travels in Persia and in the Land of the Kurds' (1851); 'Scientific Travels in Tropical America' (1870); 'The Darwinian Theory and the Law of Migration of Organisms' (1868).

WAGNER, Richard, German composer, creator of the modern music drama: b. Leipzig, 22 May 1813; d. Venice, 13 Feb. 1883. His father, a clerk in the police court, who had been appointed chief of police by Marshal Davoust during the French occupation of Leipzig, died when Richard was only six months old; and the widow, left with seven children, married, nine months later, Ludwig Geyer, a well-known actor, playwright and portrait painter, as well as a tenor. His appearances at the opera in Dresden, where he lived, gave young Richard opportunity to become familiar with the operas then in vogue, his favorite being Weber's 'Freischütz,' which made a deep impression on him and determined the direction of his own genius to such a degree that it has been aptly said that it was Weber who wrote the first "Wagner Operas." When Geyer died, Richard was eight years old and he had not, up to that time, shown any special talent for music; indeed, he played the piano so badly that his teacher told him he would never amount to anything. His poetic talent began to manifest itself when he was 11. Shakespeare became his model and at 16 he had completed a tragedy, a sort of compound of Hamlet and Lear, in which he killed off so many of the characters (42) that most of them had to be brought back as ghosts to prevent the play from coming to an untimely end. It was his desire to set this to music that first decided him, at 16, to become a musician. He took some lessons and after a few preliminary trials wrote a piece concerning which he himself said afterward that "Beethoven's ninth symphony appeared like a simple Pleyel sonata by the side of this marvelously complicated overture." These youthful extravagances were prophetic of the man who was to revolutionize the opera by his bold defiance of all conventions. In 1830 he entered the University of Leipzig as a student of philology and æsthetics; but music claimed most of his attention, and he wrote, among other things, a symphony which showed such a remarkable mastery of the methods of classical composition as to indicate that he could have become one of the great masters in the concert field had not the inclination of his genius taken him into the operatic domain. He wrote his first opera at Würzburg, where he had secured an engagement as chorus master; it was entitled 'The Fairies,' but was not performed till five years after his death at Munich.

His second opera, 'Das Liebesverbot' (based on 'Measure for Measure'), had a deservedly unsuccessful production at Magdeburg. Then he accepted an appointment as conductor at Königsberg, where he married a pretty actress, Minna Planer; and in the following year he moved again, to the Russian town of Riga, where he wrote the libretto and the music of the first two acts of 'Rienzi.' This opera was planned on such a big scale that he knew he never could have it properly produced at a provincial theatre, wherefore he boldly resolved to go to the headquarters of spectacular opera — Paris — and try there to rival the popular idol, Meyerbeer, in his own field. With his wife and a huge Newfoundland dog he embarked at Pillau for London; the voyage lasted nearly four weeks; three times the ship was tossed by violent storms and it was during these that Wagner got the realistic "local color" for his 'Flying Dutchman,' the story of which was engaging his attention at the time. Paris did not prove hospitable to the German musician. He tried in vain to have one of his operas produced; no one cared for the French songs he wrote and which he was finally glad to sell in Germany at $4 apiece; he could not even get a place as chorus singer in a Boulevard theatre. Luckily he found a music publisher, Schlesinger, who paid him for proof-reading and arranging popular melodies and operatic scores for piano and cornet and other instruments. Wagner also wrote some interesting musical essays and novelties which were printed and paid for and which contain many autobiographic details. He completed 'Rienzi' and also wrote the music of the 'Flying Dutchman'; but finally after nearly three years of starvation and numberless disappointments, left Paris for Dresden, whence he had received a request for his 'Rienzi.'

With the return to Germany begins the second period in Wagner's life. 'Rienzi' was produced at Dresden 20 Oct. 1842 and proved such a brilliant success that there was a demand for his other opera, 'The Flying Dutchman,' which was given 2 Jan. 1843, only about 10 weeks after 'Rienzi.' This proved to be less of a success; the performance was poor and the audience was puzzled and displeased when in place of the usual airs and processions it found an opera without arias, duos and dances — an opera so new in form and spirit that few could understand it. Only four performances were given. However, 'Rienzi' had made Wagner the hero of the day; he was appointed royal conductor and kept that position about six years. His next opera, 'Tannhäuser,' departed more widely still from the accepted models. It was produced 19 Oct. 1845 and, to Wagner's chagrin, seemed to give pleasure only in so far as it resembled the old-fashioned operas. However, he persevered in his path of reform and wrote 'Lohengrin.' It was finished in 1848, but he could not even get it accepted for performance. Nor could he get any attention for his plans for reforming the Dresden Opera. He became more and more dissatisfied with his position, and when, in 1849, the Revolution broke out, he foolishly joined the insurgents. The result was that he had to seek safety in flight; his companions were caught and imprisoned, while he succeeded in reaching Weimar where Liszt took care of him and provided him with the means of escape to Switzerland. In that home of political refugees he dwelt during most of the years — more than a decade — that he was exiled from Germany. For six years he composed no more operas, devoting his time to writing essays on musical and dramatic subjects by way of explaining his theories. Little attention was paid to these and he might have starved but for the assistance of Liszt and other friends. All this time the plans for his great 'Nibelung Tetralogy' were slowly maturing in his mind. In 1852 the poems were finished and printed and 1 Nov. 1853 he began to write the music for 'Rheingold'; it was finished the following year and 'Die Walküre' was completed by March 1856. In the meantime he had unwisely accepted an offer to conduct a series of Philharmonic concerts in London (1855). Queen Victoria and the public were kind to him, but the press treated him shamefully, his music being described as an "inflated display of noise and extravagance," as void of melody, etc. He got only $1,000 for four months' work. Returning to Switzerland, he finished 'Die Walküre' and began the third opera of the Nibelung Tetralogy, 'Siegfried.' When he had got to the middle of the second act, he despaired of ever finishing and producing this great cylic work, and so abandoned it for the time being (in June 1857) and began his 'Tristan und Isolde,' which, being a separate work, would, he hoped, re-establish his connection with the stage. He completed it in 1859, but seven years elapsed before he succeeded in producing it. In 1860 he gave a series of concerts in Paris; they resulted in a large deficit. In the following year Napoleon ordered a performance of 'Tannhäuser.' Wagner was given to understand that he must introduce a ballet in the second act; he refused to do so, and the members of the Jockey Club took their revenge by creating such a disturbance that Wagner declined to allow more than three performances to be given. He thus received only $150 for a year's hard work. Immediately after this disaster he wrote the poem for his only comic or humorous opera, 'Die Meistersinger,' of which he had made a sketch as early as 1845.

It was while composing this opera that the most important event of his life happened. He seldom had much money, but when he had he spent it with artistic lavishness, nor did he hesitate to live beyond his means. The failure, through no fault of his, of a Russian concert project, left him so deeply in debt in Vienna, that, to escape prison, he had to hide in Germany. On 3 May 1864, he was preparing to disappear in the Suabian Alps, there to complete his 'Meistersinger' score, when a message arrived from the new king of Bavaria, Ludwig II, who invited him to come to Munich to live there at his expense, to compose operas and produce them. Wagner wept for joy, and promptly proceeded to Munich, where 'Tristan und Isolde' was produced on 10 June 1865 and 'Die Meistersinger' 21 June 1868. But Wagner's enemies made life so unpleasant for him that he left Munich and took up his abode in a villa on Lake Lucerne, where, after completing his comic opera, he took up 'Siegfried' and finished that (1869). The fourth and last opera of the Tetralogy, 'Götterdämmerung,' was not completed till 1874. His plan of having a special theatre for the Tetralogy built in Munich having failed, notwith-


Richard Wagner

standing the king's friendship, he now chose Baireuth as the best place for such a theatre, in which his novel work could be presented in exact accordance with his intentions. To secure the large sum needed, Wagner societies were founded in the cities of Europe and America. In August 1876 three complete performances of the Tetralogy were given, before audiences including two emperors, a king and many musical and other celebrities. But the deficit of $37,000 discouraged a repetition of the festival. In 1882, however, after the completion of 'Parsifal,' another was held devoted entirely to that work; 20 performances were given in July and August. In the following February, Wagner died at Venice and his remains were taken in a special funeral train to Baireuth. After his death his widow (Cosima, the daughter of Liszt, whom he had married in 1870, four years after the death of his first wife) continued the festivals, which soon became enormously profitable. 'Parsifal' remained a Baireuth monopoly until 24 Dec. 1903, when Manager Conried produced it at the Metropolitan Opera House, New York, the receipts being over $200,000 for 12 performances.

In personal appearance Wagner was barely of medium stature; his head was large in proportion to his body, his forehead massive, his chin prominent, his lips refined, his eyes keen, yet kindly in expression. His life was full of disappointments, which left their traces in the lines of his face. He was 44 years old before any of his operas were heard in Vienna, Munich or Stuttgart, and 56 before any of them were sung outside of Germany. This, of course, was largely due to the fact that he refused to make any concessions to popular taste, except in 'Rienzi.' The next three operas — 'Flying Dutchman,' 'Tannhäuser,' and 'Lohengrin' — created an entirely new style, and by the time the public had become accustomed to that, he made another equally great step forward in his 'Tristan,' 'Meistersinger,' 'Nibelung Tetralogy' and 'Parsifal.' These were derisively referred to as "music of the future," by way of burlesquing his idea of the "art work of the future." This idea was that music, sculpture, poetry, painting and architecture had had their day as separate arts, and that the art work of the future was the music-drama, in which all these arts are united inseparably. His wonderful pictorial imagination is best exemplified in 'Parsifal.' Being almost as great a poet as he was a composer, he always wrote his own librettos, whose theatric and literary merits place him among the world's greatest playwrights, although they must not be judged apart from the music any more than the music must be judged apart from the plot, the scenery and the action. He preferred mythical, supernatural subjects to the historic. His operas are not, like those of his predecessors, a mere mosaic of unconnected arias, duos, choruses and orchestral interludes, but, especially in those of the last period, every part is connected with every other part by means of leading motives, or characteristic musical phrases which are associated with a particular person, incident or dramatic emotion, and which recur in the music whenever the person or dramatic idea with which they are associated recurs in the play. This practically gives the faculty of definite speech to the orchestra, the beauty and emotional power of which he further enhanced beyond all precedent by an endless variety of new tone colors and expressive harmonies. He also created an entirely new style of dramatic vocalism, which it took the singers years to master, but with which they are now celebrating their greatest triumphs; to-day Wagner's operas are more popular and profitable than any others. Apart from his operas, the list of Wagner's works includes some mediocre pianoforte pieces, several good songs, and, for orchestra, the 'Siegfried Idyll,' and three marches, the 'Huldigungsmarch,' the 'Kaisermarch' and the 'Philadelphia Centennial.' This last, like his other miscellaneous works, is mediocre. His literary works comprise 10 volumes of dramatic poems and essays on musical and philosophical subjects, some of them wordy and wearisome, others extremely keen and suggestive; English version by Ellis, who is also translator of Glasenapp's monumental biography in five or six volumes. The letters of Wagner to Liszt and other friends are extremely valuable; full use is made of them in the most elaborate biography in the English language, by Finck (1893). Other biographic and critical books are by Ashton (1902), Julien (1886), Tappert (1883), Muncker (1891), Liszt, Wolzogen (1883), Pohl, Nohl, Porges, Hueffer, Chamberlain (1896), Nietzsche, Schuré, Kufferath, Oesterlein, Dannreuther (in Grove), Henderson (1901), Krehbiel (1891), Finck (1893), Glasenapp (1876–1911), Koch (1907), Wagner, R., 'Mein Leber' (1911); thematic guides by Wolzogen, Kobbé, Heintz, Freda Winworth.

HENRY T. FINCK,
Musical Critic, New York Evening Post.

WAGNER, Rudolf, German physiologist: b. Baireuth, Bavaria, 30 July 1805; d. Göttingen, Germany, 13 May 1864. He was educated at Erlangen, Würzburg and at Paris, was appointed professor of zoology at the University of Erlangen in 1833 and in 1840 was called to that chair at the University of Göttingen, where he remained until his death. He published 'Lehrbuch der vergleichenden Anatomie' (2 vols., 1834–35); 'Handwörterbuch der Physiologie' (4 vols., 1842–43); 'Vorstudien zu einer wissenschaftlichen Morphologie des menschlichen Gehirns als Seelenorgans' (2 vols., 1860–62), etc.

WAGNER, Siegfried, German musical conductor, son of Richard Wagner (q.v.): b. Lucerne, Switzerland, 6 June 1869. He was intended for an architect, but being bent on adopting the profession of his father, he left the Polytechnic school and studied music under Kniese and Humperdinck. He became a musical conductor in 1893, traveling in this capacity on the Continent and in England and in 1896, and again in 1899, conducted the performances of 'Der Ring des Nibelungen' at Baireuth. He is the composer of the operas 'Der Bärenhäuser' to his own text (1899) and 'Herzog Wildfang' (1901), and various orchestral pieces.

WAGON, a four-wheeled vehicle for the transport of goods or passengers, drawn generally by horses. To enable the vehicle to turn as quickly and in as little space as possible, the fore pair of wheels are often made smaller

than the hind pair, and to increase this advantage still further the axle of the fore-wheels is frequently fixed to the bottom of the vehicle by a swivel joint, in which case the safts are attached to the fore-axle. The framework of the wagon is usually mounted on springs. See CARRIAGE.

WAGONER, Okla., city and county-seat of Wagoner County, on the Missouri, Kansas and Texas, the Saint Louis, Iron Mountain and Southern and the Missouri, Oklahoma and Gulf railroads, 16 miles north of Muskogee. It has a Carnegie library and has adopted the commission form of government. Its leading industries are grain elevators, flour mills, cotton gins, a cotton-seed oil mill, a wagon-wood factory, foundry and machine shops. Pop. about 5,000.

WAGRAM, vä'gräm, Austria, a village on the left bank of the Rossmach, 12 miles north-east of Vienna, famous for the great battle between the French under Napoleon and the Austrians under the Archduke Charles, on 5 and 6 July 1809. Napoleon had obtained reinforcements after the severe loss which he sustained at Aspern ad Essling, and was able to thrown an armv of 150,000, with 550 cannon, acress the Danube on 5 July. The Austrians, who occupied a strong position at Wagram, were immediately attacked, but the first day with little success. On the following morning the archduke fell upon the French centre under Masséna, and then upon their left, producing confusion ending in total rout. A successful attack upon the Austrian left and centre by Davoust and MacDonald compelled the archduke to retreat, which he did leisurely and in good order, carrying with him about 7,000 prisoners, but leaving behind him 25,000 dead and wounded on the field, the French loss being probably about equal. On the 12th an armistice was signed at Znaim, and negotiations were commenced for a peace, which was concluded on the 14th October at Schönbrunn, and by which Austria ceded all her seacoast to France; Bavaria and Saxony were enlarged at her expense; part of Poland in Galicia was given to Russia, and Joseph Bonaparate was acknowledged king of Spain.

WAGSTAFF, Blanche Shoemaker, American editor and author: b. New York City, 10 July 1888. She is a daughter of the late Henry F. Shoemaker (b. 28 March 1842; d. 2 July 1918), the pioneer railroad man, who laid out 3,000 miles of western railways and became chairman of the board of directors of the Cincinnati, Hamilton and Dayton. He served in the Civil War as lieutenant of the 27th Pennsylvania Volunteers and subsequently organized the Harriman National Bank and the Trust Company of America. The earliest paternal American ancestor of Mrs. Wagstaff was Peter Shoemaker, a Quaker, who came to America from Holland in 1680 and settled in Germantown, Pa. Her mother was Blanche Quiggle, daughter of Col. James William Quiggle, LL.D., sometime deputy attorney-general of Pennsylvania and State senator. On 29 April 1907 Miss Shoemaker married Alfred Wagstaff, Jr., and has one son, Alfred Wagstaff, 3d. She was educated at the Brearley School and Miss Spence's School, New York. Mrs. Wagstaff is a prominent critic on the *New York Times Book Review;* is a contributor to *Harper's, Hearst's, The Smart Set,* the *New York Herald* and other periodicals, contributing editor of the *Van Norden Magazine* and the *International Magazine,* and editor of the *Poetry Journal,* Boston. In 1910 her Greek drama, 'Alkestis,' was staged at the Hudson Theatre, New York, by the Coburn Company, and was later played before colleges, etc. Among her public services during the late war were the following: Chairman of the National Woman's Service League, 1917; desk lieutenant of the War Camp Community Service; volunteer in the Second Federal Reserve District; Liberty Loan writer and member of the Vigilantes Association (Authors' Americanization Propaganda).

Mrs. Wagstaff's publications include 'Song of Youth,' poems (1906); 'Woven of Dreams' poems (1907); 'Atys' (1909); 'Alkestis,' drama (1911); 'Eris,' drama (1913); 'Narcissus' (1917); 'Book of Love' (1917); 'Leaves in the Wind,' poems (1920); the songs, 'I Never Knew'; 'Mother'; 'Adoration'; 'Hope'; 'You Took the Spring'; also epigrams, sociological essays and government treatises on the Liberty Loans during the war. She has contributed also to the anthologies: 'Garden of Life'; 'Lyric Year'; 'Young Idea'; 'Fifes and Drums'; 'World and Democracy'; and to the volume of war poems issued for the blind by the Board of Education, New York, and verses recited for Y. M. C. A. hospitals with the American Expeditionary Forces.

Mrs. Wagstaff is a member of the Pen and Brush Club, the Poetry Society of America, the Authors' League, the Pennsylvania Society, vice-president of the Dante League, the Huguenot Society, the Badminton, Colony, Sound Beach Golf Club and of the National Association of Women Painters and Sculptors. She is the possessor of an admirable collection of Shelleyana.

WAGTAIL, a small passerine bird of the family *Motacillidæ,* so called from the habit of jerking the long tails when runing or perching. In this family, which also includes the pipits (*Anthus*), or titlarks (q.v.), the bill is slender, straight, and notched at the tip; the tarsi very long and slender for a passerine bird; the wing with nine primaries and elongated inner secondaries, and the tail long. About 100 species are known, most of them belonging to the Old World. North America has four species of pipits and three wagtails, one of which (*Budytes flavus*) is abundant in Alaska, the others (*Motacilla alba* and *M. ocularis*) are stragglers from Europe and Asia, respectively. The wagtails inhabit meadowlands and pastures, and frequnt pools and streams. They are agile runners, and have an easy, undulating flight. The food consists of insects, worms, snails, etc., especially such as may be found by wading. Their nests, built on the ground, contain from four to six eggs. A well-known European species is the pied wagtail (*Motacilla yarrellii*), a permanent resident in Great Britain. The white wagtail (*M. alba*) is common in France and southern Europe, is widely distributed in Asia and occasionally wanders to Greenland; it resembles the preceding species, but is rather slender in form, and has the throat and part of the head and neck alone black, the general color of the

upper parts being of a light ash gray. The blue-headed wagtail (*Budytes flavus*) is about six and one-half inches long, yellowish green above, bright yellow below, the head bluish gray except for the yellow throat and white superciliary stripe. This species is distributed extensively over Europe and Asia, and breeds plentifully in Alaska. The nest is formed of roots and moss sometimes lined with feathers, and placed in a hollow on the ground. The name of water-wagtail is in the United States often given to the water-thrush.

Consult Dresser, 'Birds of Europe'; Seebohm, 'Birds of Asia'; and the writings of Nelson, Turner and Murdoch.

WAH, the Nepalese name of the panda (q.v.).

WAHABEES, wä-hä'bēz, **WAHABIS,** or **WAHABITES,** a Mohammedan sect, founded in Arabia about 1745 by Abd-el-Wahab, a merchant as well as an Oriental scholar of high attainments, who could not help observing the corruption both in doctrine and in practice prevalent among the professed sons of Islam, especially the Turks. He deemed it his mission, not to teach a new religion, but to purge the innovations and errors which had crept into the old faith, and to restore the doctrines and observances to strict harmony with the teachings of the Koran and the Sunna.

WAHKIAKUM (the name of a former chief). A tribe of the Chinookan stock of North American Indians, formerly living near the mouth of Columbia River, in Washington. They were originally a part of the Chinook tribe, but separated in the latter part of the 18th century, under Chief Wahkiakum, whose name they afterward assumed. They were first noted by Lewis and Clark. A county in southwestern Washington bears their name.

WAHL, William Henry, American scientist: b. Philadelphia, Pa., 14 Dec. 1848. He was graduated from Dickinson College, Carlisle, Pa., in 1867, studied at the University of Heidelberg and subsequently made a special study of mineralogy, geology and chemistry. He was professor of physics and physical geography at the Central High School at Philadelphia in 1873–74; resident secretary at the Franklin Institute and editor of the *Journal* of Franklin Institute in 1870–74, and in 1876 became editor of the Philadelphia *Polytechnic.* He was associate editor of the *Engineering and Mining Journal* in 1878–80, editor of the New York *Manufacturer and Builder* in 1880–82 and then resumed his former post at the Franklin Institute. He published 'Galvano-plastic Manipulations' (1883); 'Preparations of Metallic Alloys' (1893); 'Historical Sketch of the Franklin Institute' (1894), etc.

WAHOO, wä-hoo', Neb., city, county-seat of Saunders County, on Cottonwood Creek, and on the Chicago, Burlington and Quincy and the Union Pacific railroads, about 50 miles west of Omaha. It is in a fertile agricultural region in which the principal products are wheat and corn. The chief shipments are wheat, corn and livestock. The principal industries are flour milling and cement works. There are 11 churches, a high school, elementary schools and a public library. The Luther Academy, under the auspices of the Evangelical Lutheran Church, was chartered in 1883. There are three banks and two newspapers. Pop. about 2,200.

WAHOO. See WAAHOO.

WAHOWPUM ("willow people"), a small tribe of the Shahaptian stock of North American Indians, occupying the village of Hahau on the north bank of Columbia River, near the mouth of Olive Creek, in Klickitat County, Wash. They have never been officially recognized.

WAHPEKUTE ("shoot among deciduous trees"), a division of the Santee of the Dakota confederacy of the Siouan stock of North American Indians. They are now officially regarded as "Santees," of whom there are 1,300 under the Santee Agency, Nebraska.

WAHPETON, wâ'pę-tŭn (*Wa'qpe'tongwong,* "dwellers among deciduous trees"). A division of the Dakota confederacy of the Siouan stock of North American Indians. Like the other Dakota tribes they live largely by hunting and were noted warriors. There are now 1,030 Sissetons, "cut-heads," and Wahpetons under the Devils Lake Agency, North Dakota, and 1,950 Sissetons and Wahpetons under the Sisseton agency, South Dakota, but the numbers of the individual tribes are not known. Consult McGee, 'The Siouan Indians' (15th Report, Bureau of American Ethnology, Washington, 1897).

WAHPETON, wâ'pē-tŏn, N. Dak., city, county-seat of Richland County, in the southeast corner of the State, at the confluence of the Red River of the North and the Sioux Wood River, and on the Great Northern, the Northern Pacific and the Chicago, Milwaukee and Saint Paul railroads, opposite Breckenridge, Minn., and about 43 miles south of Fargo. It was settled in 1872 by M. T. Rich, became a village in 1881 and in 1884 was chartered as a city. The chief industrial establishments are flax fibre works, flour mills, machine shops, wagon factory and lumber mills. It has grain elevators and lumber yards. The principal buildings are the county courthouse, churches and schools. There are eight churches. The educational institutions are the Red River Valley University, the State Academy of Science, the Lutheran Bible School and public and parish schools. The three banks have a combined capital of $160,000. The government is vested in a mayor and a council of six members elected biennially. About one-half the population are Scandinavians, Germans and Bohemians combined, the rest are American-born. Pop. 2,814.

WAHSATCH MOUNTAINS, a range in the State of Utah, the eastern boundary of the Great Basin, extending from the north boundary of the State south nearly to the Colorado River. Several peaks are nearly 12,000 feet high; at the base and among the foot-hills are deep canyons. Silver in large quantities is found in these mountains. See ROCKY MOUNTAINS; UTAH.

WAIAM, wī'am (so called from their principal village), a small tribe of the Shahaptian stock of North American Indians, also known as Des Chutes, Wyams, etc. Their chief village was on the Columbia River, where Celilo now is. They took part in the Wasco treaty of 1855

and are now on Warmspring Reservation, Oregon.

WAIILATPUAN (wī"ē-lăt'poo-an) **INDIANS** (Wai'lĕtpu, plural of Wai'ĕlet, "one Cayuse man"), a linguistic stock of North American Indians, consisting of the Cayuse and Molala tribes. The former originally occupied the mountain country on the heads of Wallawalla, Umatilla and Grande Ronde rivers, in Oregon and Washington; the Molala resided on Molala Creek, west of the Cascades in Oregon. The former tribe bore a high reputation for intelligence and bravery, but on account of their fighting propensities, which led them to make constant war against the Shoshoni and other tribes to the west, they were never very numerous. In 1838 a Presbyterian mission was established among them by Dr. Marcus Whitman, at the site of the present Whitman, Wash. In 1847 smallpox carried off a large part of the tribe, and the Indians, believing the missionaries to be the cause of it, attacked and destroyed the mission 27 November and killed Whitman and 13 others. In 1854 the Cayuse numbered 126, of whom there were but few pure-bloods, the majority being intermixed with Nez Percés and Wallawallas. Of the 374 so-called Cayuse now on Umatilla Reservation, Oregon (which they share with the Umatillas and Wallawallas), only a few retain their own language. This reservation was set aside in 1855. There are perhaps two dozen survivors of the Molala tribe on Grande Ronde Reservation, Oregon. Consult Mooney, 'Ghost Dance, Religion' (14th Report, Bureau American Ethnology, Washington, 1891).

WAIKATO, wī'ka-tō, New Zealand, the principal river of North Island, flows first into Lake Taupo and then out of it north to Manakan Harbor on the west coast with a total course of 170 miles. Mercer, Hamilton and Havelock are the chief towns along its banks. Between the Upper Waikato, Lake Taupo, Mount Ruapehu and the west coast lies the mountainous and picturesque "King Country," occupied mainly by Maoris under their king, who till 1884 resolutely opposed the survey or settlement by Europeans of the lands within their *aukati* or frontier.

WAINEWRIGHT, wān'rīt, **Thomas Griffiths,** English art critic and forger: b. Chiswick October 1794; d. Hobart Town, Tasmania, 1852. He studied art in London, wrote art critiques for the *London Magazine,* on which Lamb, Hood, Cunningham, Hazlitt and De Quincey were at the time (1820–23) collaborators, and exhibited at the Royal Academy in 1821–50. In 1826 he forged an order on the Bank of England for £2,250, in 1837 was sentenced at the Old Bailey, to transportation for life, to Van Diemen's Land (Tasmania). He was also believed to have been concerned in several poisoning cases, to obtain money. He appears as Varney in Bulwer's 'Lucretia' and Dickens' 'Hunted Down' was based on his career.

WAINWRIGHT, wān'rīt, **Jonathan Mayhew,** American Protestant Episcopal bishop: b. of American parents, Liverpool, England, 24 Feb. 1793; d. New York, 21 Sept. 1854. He was graduated at Harvard College in 1812, studied theology and took holy orders, and was rector of Grace Church, New York, 1821–34. He was rector of Trinity Church, Boston, 1834–38, and assistant in charge of Saint John's Chapel, New York, from the last-named year till November 1852, when he was consecrated provisional bishop of New York. He was one of the founders of the University of New York, and was considered one of the most eloquent American pulpit orators of his time. His publications include 'Sermons on Religious Education' (1829); 'Lessons on the Church' (1835); 'The Pathway and Abiding Places of Our Lord' (1851); 'The Land of Bondage' (1852), etc.

WAINWRIGHT, Richard, American naval officer: b. Washington, D. C., 17 Dec. 1849. He was graduated from the United States Naval Academy in 1868, was promoted lieutenant in 1873, lieutenant-commander in 1884, and was executive officer on board the battleship *Maine* at the time of her destruction in Havana Harbor in 1898. In the war which followed he was in command of the *Gloucester* and took part in the naval battle at Santiago, 3 July 1898, in which he destroyed the Spanish torpedo boats *Furor* and *Pluton.* He was superintendent of the Naval Academy in 1900–02 and in 1903 was assigned to the command of the *Newark,* in 1907 to the *Louisiana,* and in 1908, commanded a division of the Atlantic fleet. He was retired in 1911.

WAIT, John Cassan, American lawyer and civil engineer: b. Norwich, N. Y., 4 June 1860. He was graduated from Cornell as a civil engineer in 1882, and from the Harvard Law School in 1891. In 1887–94 he was instructor and assistant professor at Harvard and in 1896–97 was in charge of the New York State canal improvements. He was associate editor of the *Railroad Gazette* in 1894–95 assistant corporation counsel for the city of New York in 1900–03, and published 'Car Builders' Dictionary' (1895); 'Engineering and Architectural Jurisprudence' (1897); 'Law of Contracts' (1901); 'Poems of Industry and Labor'; 'Calendar of Invention and Discovery' (1903), etc.

WAIT, William Bell, American educator of the blind: b. Amsterdam, N. Y., 25 March 1839; d. New York City, 25 Oct. 1916. He was graduated from the Albany Normal College in 1859, and in the same year became a teacher in the New York Institute for the Education of the Blind. Later he studied law, and was also at one time superintendent of schools at Kingston, N. Y., and from 1863–1905, was principal of the Institute for the Education of the Blind. In 1905 he was made emeritus principal, which rank he held until his death. At the beginning of his work for the blind in 1863, Mr. Wait began an exhaustive study of the touch system of writing and reading, his efforts resulting in the famous New York point system. He followed this success by the introduction of a system of tangible musical notation. In 1894 he with the invention of the kleidograph, a machine for embossing the New York point system on paper, a practical typewriter for the blind now in use. Later he invented the stereograph, a machine for embossing metal plates to be used in printing books for the blind. His next step was to invent a machine for embossing both sides of the leaf. He also was instrumental in obtaining an annual grant

of $10,000 from Congress for publication of books for the blind.

WAITE, Henry Randall, American editor and clergyman: b. Copenhagen, N. Y., 16 Dec. 1845. He was graduated at Hamilton 1868, then was engaged in journalism till 1870; studied theology in the Union Theological Seminary, New York, and in 1871–74 was pastor of the American church in Rome; was editor of the *International Review* 1876–77, and in the meantime and till 1880 pastor of a Presbyterian church in Pelham, N. Y. In 1891 he became acting pastor of a Congregational church in Brooklyn. Waite was president of the Political Science Association of New York 1876–77; special officer of the United States census 1880–83; editor of the Boston *Citizen* 1885–86; then editor of *Civics* in New York. He has published 'The Motive of St. Paul's Life'; 'Illiteracy and the Mormon Problem.'

WAITE, wāt, **Morrison Remick,** American jurist, seventh chief justice of the United States: b. Lyme, Conn., 29 Nov. 1816; d. Washington, D. C., 23 March 1888. He was graduated from Yale in 1837; studied law, and in 1838 moved to Ohio, where he was admitted to the bar in 1839. He began the practice of his profession in Maumee City, later moving to Toledo. In politics he was at first an active and influential member of the Whig party, and was elected to the Ohio State legislature in 1849; later he took part in the organization of the Republican party; was an ardent supporter of Lincoln; and was nominated for Congress in 1862, but failed of election. His national reputation dates from the time of his appointment by President Grant as one of the counsel to represent the United States before the tribunal for the consideration of the Alabama claims at Geneva; associated with him were Caleb Cushing and William M. Evarts, the latter a college classmate. His reply to Sir Roundell Palmer, establishing Great Britain's liability for permitting the Confederate cruisers to coal in British ports during the Civil War, was considered a model of legal argument in its clear, direct and logical presentation of the law and facts. In 1873 he was chosen by both political parties as a delegate from his county to the convention for revising the State constitution of Ohio, and was made president of that convention. In the same year he was appointed chief justice of the national Supreme Court, the appointment being approved by a unanimous vote of the Senate. Many of the most important subjects of adjudication came before the court during his term of office. Among them were the following: The constitutionality of the enforcement act; interpretation of the latest constitutional amendments; rights and powers of the State to control and regulate the charges of railroads; the polygamy cases; federal control over elections; power of the President to remove from office; power of States to prohibit the liquor traffic; repudiation of State debts and the true meaning of the 11th amendment; questions arising out of the violence of the Chicago anarchists, and the exclusion of the Chinese. His work was marked by the strictest attention to detail, and by a rigid enforcement of the rules and precedents of practice of the court; it was his custom to keep watch of the docket and acquaint himself in advance with the character of the cases about to be reached. In all questions his decisions were entirely uninfluenced by political considerations; and all parties and sections united in commending his absolute fairness. A prominent lawyer of the South said of him: "He could hold in his steady and equal hand the balance of justice undisturbed."

WAITS, the king's minstrels, who in England and other countries used formerly to guard the streets at night and proclaim the hour. The name was afterward applied to the town's musicians, who, however, did not perform the duties of watchmen, and to private bands, when employed as serenaders. In modern times the waits are musicians who play during the night hours on the approach of the Christmas or New Year seasons, and call at the houses of the inhabitants for donations. While this custom exists to some extent in the United States, the term "waits" is not used here.

WAKAMATSU, wä-kä-mä-tsoo, a city of Japan formerly named Aidzu, for centuries the centre of politics and culture and considered the strategic key of northwestern Japan, with a castle built in the 14th century and the seat of a clan ever loyal to the Tokugawa shoguns of Yedo. Around this last stronghold of the already lost cause, the imperial armies gathered in 1868. The great castle sustained a siege of one month, even boys and girls performing prodigies of valor. The doomed garrison surrendered 6 November, ending the civil war. The castle and most of the city were given to the flames leaving a level waste of ashes. Of the defeated clansmen large numbers became active in the Russo-Greek Catholic and other Christian churches, while in 1877 hundreds of expert swordsmen, who had old scores to settle with Satsuma, aided powerfully in suppressing Saigo's rebellion. From this disaster of 1868, the city has made recovery largely through the chemical, lacquer, zinc and other industries, until now, it is among the foremost in promise in the empire. Electric lighting is general in houses and factories and the power plant, containing six 10,000 horse-power dynamos, erected in 1915, is the largest in the Orient. Of the chemicals imported, in 1913, before the war, no fewer than 40 are now made at this place. In the Aidzu valley a development of 500,000 horse power is possible. Lake Inawashiro, 1,000 feet higher, or 1,680 feet above sea level, is five miles distant. Close to the rapids of the Nippachi River, three nests of dynamos are planned. Thus the waters, utilized for ages in the work of irrigation, will be freshly utilized for cheap power and manufactures. Consult Noss, 'Tohoku, the Scotland of Japan' (1918).

WAKASHAN (wä'kạ-shăn) **INDIANS** (from *Waukash,* the Nootka word "good," which, when heard by Captain Cook, was supposed to be the tribal name), a linguistic stock of North American Indians, consisting of the Aht and Haeltzuk divisions with their numerous tribes, occupying the northern half and the western part of the southern half of Vancouver Island, the opposite mainland of British Columbia, and a small area about Cape Flattery inhabited by the Makah, one of the Aht tribes. The stock has also been referred to as Nootka and Nootka-Columbian, the term Nootka being

the first name applied to the Mowachat, an Aht tribe. Of the Aht division there are some 20 tribes, numbering in all about 3,100 individuals, of whom there are 414 Makah under the Neah Bay Agency, Washington, the remaining tribes being under the West Coast Agency of British Columbia. The 17 Haeltzuk tribes number in all about 2,500 souls, of whom about 1,900 are under the Kwawkeweth Agency, British Columbia.

WAKATIPU, wä-kạ-tē'poo, New Zealand, a picturesque lake in the South Island with an area of 112 acres. Queenstown and Glenorchy, on the borders of the lake, are favorite tourist resorts, on account of the magnificent mountain scenery in the vicinity.

WAKAYAMA, wä"kä-yä'mä, Japan, a town on the island of Hondo, situated on the east coast of the channel leading into the eastern end of the Inland Sea, 35 miles by rail southwest of Osaka. It is an important centre of the cotton industry. Its noted features are the princely Kishu palace, and the beautiful temple of Kijmijdera, said to have been founded in 770 A.D. Pop. 77,700.

WAKE, William, English prelate: b. Blandford, Dorsetshire, 26 Jan. 1657; d. Lambeth, 24 Jan. 1737. He was graduated from Oxford, took orders in the Anglican Church in 1676, and in 1688 he became preacher at Gray's Inn. In 1689 he was appointed chaplain in ordinary to William and Mary, and also received a canonry of Christ Church, Oxford. From 1693 to 1706 he was rector of Saint James', Westminster, became canon residentiary and dean of Exeter in 1703, from 1705 to 1716 he was bishop of Lincoln. In 1716 he was enthroned archbishop of Canterbury. He took part in negotiations during 1717–20 for the union of the Anglican and the Gallican churches, and in his relations with Nonconformists showed a liberal spirit. His chief works are 'The State of the Church and Clergy of England in their Councils, Synods, Convocations, Conventions, and their other Assemblies, historically deduced' (1703); 'The Genuine Epistles of the Apostolical Fathers' (1693); and 'Principles of the Christian Religion in a Commentary on the Church Catechism.'

WAKE, originally an annual festival held on the anniversary of the day on which a parish church was consecrated and dedicated to a saint, the celebration being begun on the preceding day (the eve or vigil). On the eve of the anniversary the parishioners attended service in the church, the floor of which was strewed with flowers and rushes, and the altar and pulpit were decorated with boughs. Tents were planted in the churchyard to supply the people from surrounding parishes who were expected on the morrow, that day being observed as a holiday. They soon degenerated into mere country fairs, and were long characterized by wild riot and licentiousness. Statutes were at various times directed against holding markets in churchyards and showing all goods except necessary refreshments on the great church festivals, but they seem to have been little regarded. Country wakes on some saints' festivals are still kept up in certain English parishes.

A *lyke* or *liche wake* (Anglo-Saxon, *lic,* a corpse) is the watching of a dead body by night by the relatives and friends of the deceased. The custom arose no doubt from the dread of remaining alone all night in the presence of the dead or from the fear that malignant spirits would interfere with the corpse. The practice, once general, is now confined in the United States to a part of the foreign element, and is on the decline with them. Wakes are sometimes attended by scenes of disorder and intoxication, but as a rule they are conducted with decency and show sincere respect for the dead.

WAKE FOREST COLLEGE, located at Wake Forest, N. C., 16 miles northeast of Raleigh. It was chartered in 1833, as the Wake Forest Institute, under the auspices and control of the Baptists of the State; it was first opened to students in 1834, and in 1838 the charter was amended, its privileges enlarged and the name changed to Wake Forest College. The greater part of the endowment was lost during the Civil War, but the college continued its work and regained its financial prosperity. The system of independent "schools" is now an established feature of the college organization; these schools are 15 in number, as follows: Latin, Greek, English, modern languages, mathematics, astronomy, chemistry, biology, physics, moral philosophy, history and political science, the Bible, pedagogy, law and medicine. There are preparatory courses offered in Latin, Greek, mathematics and English. The college confers the degrees of A.B., B.S., LL.B. and A.M. (for graduate work). In the A.B., and B.S., courses a part of the work is elective, the electives being somewhat limited, however, in accordance with the degree to be obtained. For the degree of LL.B., the full course in the School of Law must be completed, also the course in the School of History and Political Science. Students are admitted to the School of Medicine, either as medical students or as undergraduates, if taking the B.S., course. The completion of the course admits to the third year of any good medical school. With the aim of encouraging ministerial education, it has been the custom of the college to organize a special class, studying different phases of pastoral work or theology; this is outside the regular work of the School of the Bible, and does not count toward a degree; a pastors' course of one month was inaugurated in 1902 for those pastors who could obtain a month's leave of absence from their churches. The college has a pleasing location on high ground; its buildings include the main building, the Heck and Williams Building (library), the Wingate Memorial Building (chapel and audience hall), the Lea Laboratory (chemistry) and the Gymnasium. The productive fund is about $500,000; the library contains over 25,000 volumes, the students average annually 500, and the faculty 48.

WAKE ISLAND, an islet of rock in the Pacific Ocean, lying 1,550 miles northeast of Guam, and 3,000 miles east of Luzon, Philippines. It belongs to the United States as a Pacific outpost of the Philippine Archipelago. It is about one square mile in area, and its importance is due to the fact that it is on the cable route between the United States and the Philippines.

WAKE-ROBIN, the first of John Burroughs' collection of essays, which in its charm and character may well stand as an example of all. It is mostly about birds and their ways, but it has also essays and passages that show his wider knowledge and love of nature and the out-door life in general. Burroughs is a great naturalist; one would not exactly say a great scientist, for he rarely puts into scientific form the observations and generalizations that science seems to demand. Yet he is a great naturalist, for his life has been passed in observing nature and learning her secrets. 'Wake-Robin' (the popular name of the white trillium) is an invitation to come and do likewise. It was written mostly in Washington, where in the 60's, Burroughs was a department clerk, but it is made out of recollections of earlier days in the Catskill country where he was born and brought up. It has more in it of birds than of other things, but it is full of the flavor of out-door life. "Look about you," he says, "and see the beautiful and wonderful things all around." In 'Wake-Robin' we have an invitation to the fields and the woods, to the daily pleasures of bird and flower or fish and deer, of the naturalist or the camper. John Burroughs and Henry D. Thoreau are the two chief masters in a form of literature in which America is pre-eminent, the literature of nature; and if one will read 'Wake-Robin' (as well as 'Walden') one will know why. The book has not only the keen observation that detects every fact, but the humanity that enables one to put the fact so as to be interesting to those of lesser powers.

EDWARD EVERETT HALE.

WAKEFIELD, Edward Gibbon, English colonial statesman: b. London, 20 March 1796; d. Wellington, New Zealand, 16 May 1862. Educated at Westminster School and Edinburgh High School, he became associated in a subordinate capacity with the legations at Turin and Paris. About 1826 he turned his attention to colonial affairs and worked out the scheme of colonization usually known by his name. Its cardinal features were the abolition of free grants of land for agricultural purposes (then so readily obtained that none cared to remain dependent, and laborers were at once transformed into landed proprietors); and the careful control of emigration. His views were first publicly expressed in 'A Letter from Sydney' (1829). The National Colonization Society was founded in 1830 to carry out his ideas, and in the following year his plan was adopted by the government for New South Wales. The South Australian Association was formed in 1834, and included many eminent men, and under its auspices the colony of South Australia was founded in 1836 on Wakefield's principles. He accompanied Governor-General Lord Durham to Canada in 1838 as adviser, and had an important share in drawing up the report in which Durham embodied his proposals for settling the Canadian difficulty. Wakefield was the moving spirit behind the New Zealand Association of 1837, which forced the British government to annex New Zealand. He was subsequently a prime mover in founding the Anglican settlement in New Zealand, and in 1852 he went to New Zealand and plunged into colonial politics. After the breakdown of his health in 1854 he lived in retirement till his death. All subsequent English colonial development has followed the ideas formulated by Wakefield. He was equally able as a theorist and a director of practical details. Consult Rusden, 'History of New Zealand' (1883); Gisborne, 'New Zealand Rulers and Statesmen' (1892); Garnett, 'Life' in 'Builders of Greater Britain' series (1898).

WAKEFIELD, Gilbert, English clergyman and controversialist: b. Nottingham, 22 Feb. 1756; d. London, 9 Sept. 1801. He was educated at Cambridge, took orders, but renounced the Anglican communion after holding two curacies, was classical tutor in nonconformist academies at Warrington (1779–83), and Hackney (1790–91). He was imprisoned two years in Dorchester jail for a so-called seditious libel in answer to Bishop Watson, for which his political friends consoled him with a gift of £5,000. He published editions of Bion and Moschus, Virgil, Horace and Lucretius; 'Christian Writers of the First Three Centuries on the Person of Christ' (1784), left unfinished; 'Inquiry into the Expediency and Propriety of Social Worship' (1791), the necessity for which he denied; 'An Examination of Paine's Age of Reason' (1794); 'Silvia Critica,' a collection intended to illustrate the Scriptures from the stores of profane learning (1789–95). He was a man of wide learning, but although very amiable in ordinary life extremely bitter as a controversialist. After leaving the Church of England he never attached himself to any other religious society, although practically a Unitarian. Consult his autobiography, entitled 'Memoirs' (1792).

WAKEFIELD, England, an episcopal city, in Yorkshire (West Riding), on the river Calder, nine miles south by east of Leeds. The Cathedral of All Saints, founded 1329, is mainly in the Perpendicular style, with a lofty tower and spire, though including work of earlier and later dates. Saint Mary's Chantry, on the ancient bridge across the river, is a decorated structure of the time of Edward III, restored in 1847. Besides several other places of worship, the chief buildings and institutions of the town include the town-hall, a fine building in French Renaissance style; a large corn-exchange; a market-house and an industrial and fine art institution (1890), containing a museum, laboratory and lecture-room. The industrial establishments comprise woolen mills, soap and artificial-manure works, iron-foundries, boiler-works, agricultural implement manufactories, wire-rope works, machine-works, corn-mills, malting-works, breweries, etc. There are many collieries near the town, and market-gardening is carried on in the vicinity. The trade, especially in corn, is very extensive, and is facilitated by railway connections as well as by the river Calder and canals. Wakefield is mentioned in 'Domesday Book.' It was the scene of a Yorkist defeat in the Wars of the Roses, 31 Dec. 1460. In 1888 it was made the seat of a bishopric, formed mostly out of the diocese of Ripon. Pop. 52,300.

WAKEFIELD, Mass., town in Middlesex County, on the Boston and Maine Railroad,

about nine miles north of Boston. It is surrounded by farms, and has about 25 manufactories, chief of which are iron and brass foundries, piano, rattan goods and shoe factories, flour mills, and machine-shops. The annual product of these exceed $3,000,000. The town contains the villages of Greenwood, Montrose and Wakefield, in each of which are graded schools. There is one high school and a public library containing about 15,000 volumes. There are two banks and two daily newspapers. Pop. about 12,781.

WAKEFIELD, R. I., village in Washington County; at the head of Point Judith Inlet, an arm of the Atlantic Ocean, and on the Narragansett Pier Railroad, about 26 miles south by west of Providence. It is in a part of the State devoted to farming and market gardening. The village has cotton and woolen mills and several small industries. It has a savings bank, trust company and a newspaper. Pop. about 2,200. In 1910 the population was included with that of South Kingston town, which had a total of 5,176.

WAKELEY, Joseph Beaumont, American clergyman: b. Danbury, Conn., 1804; d. New York City, 27 April 1876. Apprenticed to a hat maker in his native town, he studied for the ministry and was admitted to the Methodist Episcopal Conference in New York (1828). He settled in Poughkeepsie (1857) and was subsequently appointed to a church in Lexington avenue, New York City. He published a number of works including 'Heroes of Methodism' (1856); 'Lost chapters recovered from the early history of Methodism' (1858); 'Anecdotes of the Wesleys' (1869); 'Portraiture of the Rev. William Cravens' (1869); 'A Prince of Pulpit Orators — Whitefield' (1871); 'The Temperance Cyclopedia' (1875); 'The Wesleyan Demosthenes: Joseph Beaumont' (1875).

WAKEMAN, Henry Offley, English historian: b. near Worcester, 25 Sept. 1852; d. Basel, Switzerland, 27 April 1899. He was educated at Christ Church, Oxford, was a Fellow of All Souls from 1877 to his death, and was admitted a barrister of the Inner Temple in 1877. His publications are: 'The History of Religion in England' (1885); 'What Has Christianity Done for England?' (1886); 'The Church, and the Puritans, 1570–1660' (1887); an edition (with Hassall) of a volume of 'Essays Introductory to the Study of English Constitutional History' (1887); 'Europe, 1598–1715' (1894); 'Introduction to the History of the Church of England from the Earliest Time to the Present Day' (1896; 5th ed., 1898).

WAKEMAN, Thaddeus Burr, American philosopher: b. Greenfield Hill, Conn., 23 Dec. 1834. He was graduated from Princeton in 1854, and was admitted to the bar in 1856. He translated Goethe's religious poems, and made a specialty of the study of positive philosophy. He was president of the Liberal University of Kansas City, and has published 'An Epitome of Positive Philosophy'; 'Liberty and Purity' (1881); 'Evolution or Creation,' etc.

WAKEMANITES, certain fanatics who were supposed to be harmless until they committed a murder at New Haven, Conn., in 1855. Their leader was an old woman named Rhoda Wakeman, supposed to have been insane. Her followers obeyed her as a prophetess and believed she had been raised from the dead. At her bidding they murdered a farmer, Justus Matthews, who, she said, was possessed by an evil spirit. The authorities prevented further tragedies by taking prompt action against all concerned in the crime, and the sect became extinct.

WAKER, Thomas Leonard, Canadian scientist: b. Chinguacousy, Ontario, 30 Dec. 1867. He was graduated at Queen's University with honors in chemistry and mineralogy (1890) and at Leipzig (1895). He was assistant in the geological survey of Canada (1890–93), fellow in chemistry in the school of mines, Kingston (1893–95), assistant superintendent geological survey of India (1897–1902), and since 1902 has been professor of mineralogy in Toronto University. He has contributed to many scientific publications.

WAKONDA, the term expressing in the Sioux dialect the native abstract idea of the supernatural element of the universe. It is not peculiar to the Sioux alone as there are parallel terms in other languages. Consult Wissler's 'North American Indians' (New York 1912).

WALAM OLUM, otherwise known as the «Red Score» of the Lenni Lenapé or Delaware Indians, and supposed to be a record of the migrations of the tribe. The word «Olum» signifies a record, and «Walam,» painted. Red is the color used. «Olum» was commonly applied to a notched stick, an engraved piece of wood or bark; but it is not unlikely that the engraved stone gorgets, notched along all their edges, or partly so, are to be included as records. The notching is too inconspicuous to be considered as ornamentation, but is so cleanly cut and defined that some serious purpose was evidently in mind in making it. The historic «Walam Olum,» for which we are indebted to Rafinesque, is declared by Antony, a Delaware Indian, to be a genuine composition of a member of that tribe. This composition or record of events during the wanderings of the people, is asserted by Brinton to be «not of foreign origin, but wholly within the Cycle of the most ancient legends of that stock» — the Algonkin. If read aright, it is a record of wanderings from the Labrador region southward and westward, and again eastward to the Atlantic Coast of the middle United States. As a record of a migration that was possibly more extensive and fateful to these people than any one other of which they had knowledge, too much value has been placed upon it. Those ethnologists who have strongly leaned to the extreme modernity of man in America have thought they found evidence therein that the whole Atlantic seaboard, and for many leagues inland, was uninhabited and had so remained for all time until this wandering, described in the Walam Olum, took place. This conclusion does not seem to be supported by the results of geological research. Entirely too much has been made also of the assumption that the migration of the Lenni Lenapé, supposedly described in the «Walam Olum,» was their only one.

WALBRIDGE, Hiram, American lawyer: b. Ithaca, N. Y., 2 Feb. 1821; d. 6 Dec. 1870. In childhood he settled with his parents in Ohio,

there received his education and was admitted to the practice of law 1842. While Texas was still an independent State, Walbridge emigrated thither with the purpose of establishing four newspapers in different quarters for advocacy of annexation to the United States; but before his plan could be executed, the State was annexed. He then returned to law practice in Toledo, Ohio, and removed to New York in 1847. He represented a New York district in Congress 1853–55.

WALCH, Garnet, Australian dramatist: b. Broadmarch, Tasmania, 1 Oct. 1843. He was educated in Tasmania, England and Germany, and on his return home he joined the staff of the *Sidney Punch* and worked on other papers, after which he founded the *Cumberland Times.* Among his publications are many farces and extravaganzas, burlesque pantomimes and comedies. These include 'Trookilentos,' an extravaganza; 'Head Over Heels'; 'On the Cards'; 'A Little Tin Plate'; 'With the Compliments of the Season'; 'Larrakin Jack'; 'Her Evil Star'; 'Humble Pie'; 'Perfidious Albion'; 'Proof Positive,' and 'Robbery Under Arms,' the latter of which ran continuously in Australia for over 10 years.

WALCHEREN, väl'hĕr-ĕn, Netherlands, an island in the province of Zeeland, at the mouth of the Scheldt, approximately circular, about 11 miles in diameter. A bridge connects with South Beveland and a railway to the main land. It is well wooded and fertile and fruit is abundant. It contains the towns of Flushing, Middleburg (the capital) and Veere, and has a population of about 40,000. It is protected from the sea by strong dikes. The island is noted for the Walcheren expedition of 1809, one of the most complete failures in British military history. The second Earl of Chatham, eldest son of the great Chatham, was dispatched to the island in command of a force of about 40,000 for the purpose of capturing Antwerp and destroying Napoleon's arsenals on the Scheldt. Instead of pressing forward against Antwerp, he persisted in the siege of Flushing, which was not captured before the greater port had been reinforced and strongly fortified by the French. Chatham returned to England with the bulk of his force, leaving a garrison of 15,000 on the island of Walcheren. The garrison was attacked by fevers and other diseases, and when orders were received from the government to destroy Flushing and return home, only a small number were fit for duty.

WALCKENAËR, väl-kĕ-năr', **Charles Athanase,** Baron, French savant and author: b. Paris, 25 Dec. 1771; d. there, 27 April 1852. At 17 he went to study at Glasgow and Oxford; served as director of transportation in the army of the Pyrénées in 1793; became mayor of Paris in 1816 and prefect of the department of Nièvre in 1824 and of Aisne in 1826. In 1830 he left the public service, and in 1840 became secretary to the Academy of Inscriptions. He was a voluminous writer. His first publication was an 'Essai sur l'Histoire de l'Espèce Humaine' (1798), and in 1802 he published 'L'Histoire Abrégée des Insectes des Environs de Paris' and in 1805 'Tableau des Aranéides,' an important contribution to entomology. Among his later works may be cited 'Le Monde Maritime' (1819); 'Nouvelle Collection des Relations des Voyages' (21 vols., 1826–31); 'Analyse Géographique des Itinéraires des Anciens' (1839); 'Histoire de la Vie et des Poésies d'Horace' (1840); 'Mémoires sur Madame de Sévigné' (1842–52), which he left incomplete.

WALCOTT, wŏl'kŏt, **Charles Doolittle,** American geologist: b. New York Mills, N. Y., 31 March 1850. In his youth he took up geology and by 1876 rose to the post of assistant State geologist of New York. He was appointed to a like office in the United States Geological Survey in 1879, became palæontologist in 1883, chief palæontologist in 1891 and in 1893 was appointed geologist in charge of geology and palæontology, and director of the Geological Survey in 1894. He was acting assistant secretary of the Smithsonian Institution in 1897–98, on 23 Jan. 1907 he was elected secretary, and in 1902 was elected chairman of the board of trustees for the National University founded by Andrew Carnegie. He also served a term as president of the Geological Society of America. He has made a specialty of Cambrian researches, and in 1888 laid the results of his labors before the International Geological Congress in London. His writings include 'The Trilobite' (1881); 'The Cambrian Faunas of North America' (1885); 'The Taconic System of Emmons' (1888); 'The Fauna of the Lower Cambrian or Olenellus Zone' (1890); 'Correlation Papers, Cambrian' (1891); 'Cambrian Geology and Paleontology'; 'The Cambrian Fauna of China'; 'The Cambrian and its Problems in the Cordilleran Region'; 'Evidences of Primitive Life,' etc.

WALDECK, väl'dĕk or wŏl'dĕk, Germany, a principality consisting of Waldeck proper and Pyrmont, whence the title Waldeck-Pyrmont, sometimes given. Waldeck proper, with an area of 407 square miles, is enclosed by the Prussian provinces of Westphalia and Hesse-Nassau; and Pyrmont, with an area of 25 square miles, is enclosed by Prussia, Brunswick and Lippe. Both sections are mountainous, and belong to the basin of the river Weser. In the western Upland, it attains in the Ettelsberg an elevation of 2,726 feet. Much of the soil is unsuited for agriculture, but the lower valley of the Eder and the northeast of Waldeck proper, are fertile. The chief industries are agriculture and the rearing of cattle, sheep, pigs, etc. Manufactures are of small extent: the most important are tobacco and cigars (Pyrmont), liqueurs (Arolsen) and machines (Wetterburg). There are iron mines at Adorf. The constitution bears date 17 Aug. 1852. The princely dignity is hereditary according to primogeniture in the male line, but on the extinction of the male line it falls to the female line. The Diet consists of 15 members elected indirectly for three years. By the Treaty of Accession of 1867, renewed in 1877 and 1887, the internal administration is carried on by a Landesdirektor appointed by the Prussian government with the approval of the prince. Its courts of justice are subject to those of Cassel and Hanover, and its troops form a battalion of a Prussian infantry regiment. Arolsen is the capital and residential town. The Reformation was introduced under Count Philip IV in 1526. The imperial field-marshal, George Frederick (1664–92) was the first of its rulers to assume the

style of prince. In 1712 the ruler, Anton Ulrich, was created a prince of the empire. Waldeck supported Prussia in the war of 1866, and entered the North German Confederation in the following year. The Treaty of Accession of 1867, which makes the prince a merely nominal sovereign, was the result of a desire expressed by the Diet for union with Prussia. Pop. 61,723, of whom about 10,000 are in Pyrmont. The inhabitants are nearly all Lutherans.

WALDECK-ROUSSEAU, väl-dĕk-roo-sō, **Pierre Marie,** French statesman: b. Nantes, 2 Dec. 1846; d. Paris, 10 Aug. 1904. He studied law, was admitted to the bar at Nantes, was elected deputy for Rennes in 1879, and in 1881 was made Minister of the Interior in Gambetta's Cabinet. This portfolio he held also with great success in the Ferry Ministry of 1883–85. In 1886 he was called to the Paris bar, and, though he continued to participate until 1889 in the debates of the Chamber of Deputies and in that year published a collection of 'Discours Parlementaires,' he then withdrew temporarily from public life and became one of the foremost of French advocates. His best known case was the defense of De Lesseps (q.v.) in the Panama Canal matter. In 1894 he returned to politics as senator for the department of the Loire, in 1895 was an unsuccessful candidate for the presidency, and in 1899 was summoned by Loubet to form a ministry. On the second attempt he succeeded in assembling in support of the Republic a cabinet including such diverse elements as Millerand, the Socialist, and General de Gallifet, who had so severely put down the Commune in 1871. He himself took again the Ministry of the Interior, and during the second Dreyfus trial, the strikes at Le Creusot, the prosecution and condemnation of Déroulède, and other troubles, he suppressed the disorder hitherto prevalent and enforced a regard for the law. The Associations bill of 1901, by which he asserted the religious associations were for the first time made subject to the rules governing others, was the principal event of the latter part of his administration. At the general election of 1902, Republican victory was complete, and Waldeck-Rousseau, regarding his service as accomplished, resigned 3 June 1902. He had proved himself one of the strongest figures in recent French politics. He further published 'Discours Prononcés dans la Loire' (1896); 'Questions Sociales' (1900); 'Associations et Congrégations' (1901); 'La Défence Républicaine' (1902) 'Pour la République' (1905), and 'L'Etat et la liberté' (2 vols., 1906) contain his collected speeches. Consult Ernest-Charles, 'Waldeck-Rousseau' (1902).

WALDEMAR I, val'dĕ-mär, or wŏl'dĕ-mar (THE GREAT), king of Denmark: b. 1131; d. 1181. He succeeded Eric V in 1147, was famous for his expeditions against the pirates of the Baltic and successful in exacting from Magnus VI, king of Norway, a treaty which secured the pre-eminence of Denmark. WALDEMAR II (the Victorious), younger son of the preceding, succeeded his brother Canute VI, in 1202. He made warlike expeditions into Sweden, Norway and Germany, raised a powerful navy and revised the laws of his kingdom. He died in 1241. WALDEMAR III, eldest son of the preceding, was regent from 1219 to 1231. WALDEMAR IV, third son of Christopher II, was in Bavaria at the death of his father in 1333. In 1340–44 he recovered part of his kingdom in war and obtained some further successes against Sweden in 1353 and 1357; eventually he was glad to obtain peace by large concessions.

WALDEN, wâl'dĕn, **John Morgan,** American Methodist bishop: b. Lebanon, Ohio, 11 Feb. 1831; d. Daytona, Fla., 21 Jan. 1914. He was graduated from Farmer's (now Belmont) College, near Cincinnati, in 1852, and afterward engaged in teaching and in journalism. He was a member of the Topeka legislature in 1857 and a delegate to the Leavenworth constitutional convention in 1858, returning in that year to Ohio where he entered the Methodist Conference. He became minister in the Cincinnati Conference Methodist Church in 1858, was one of the publishing agents of the Methodist Book Concern in 1886–84, and in the last-named year was elected bishop. For several years he was elected a member of the Ecumenical Methodist Conference.

WALDEN, Treadwell, American Episcopal clergyman: b. Walden, N. Y., 25 April 1830. He was graduated at the General Theological Seminary in 1853, took priest's orders in the Episcopal Church in 1856 and after holding charges in Newark, N. J., was rector of Christ Church, Norwich, Conn., 1857–63; Saint Clements, Philadelphia, Pa., 1863–68; Saint Paul's Cathedral, Indianapolis, 1869–72; Saint Paul's, Boston, 1873–76 and Saint Paul's, Minneapolis, 1882–85. He published 'Lays of a Lifetime' (1856); 'The Sunday School Prayer Book' (1860); 'Privations and Sufferings of United States Officers and Soldiers in Confederate Prisons' (1864); 'Our English Bible and its Ancestors' (1870); 'An Undeveloped Chapter in the Life of Christ' (1882); 'The Great Meaning of Metanoia' (1896).

WALDEN, N. Y., village in Orange County, on the Walkill River, and on the New York Central and Hudson River railroad (Walkill Valley branch); 75 miles north by west of New York and 13 miles northwest of Newburgh. The date of the first settlement is uncertain, but it was before 1768; the village was incorporated in 1855. It was first known as High Falls, owing to the fall of 40 feet in the river at this point. It is in an agricultural region, noted for its dairy products and in a valley famous for its picturesque scenery. It has large cutlery works, woolen mills, a soap factory, engine works, foundries and machine shops. There are two banks, one of which is a national bank. Pop. 5,036.

WALDEN; or, LIFE IN THE WOODS, the record of Henry D. Thoreau's famous experiment of Walden published at Boston in 1854. In 1845 Thoreau, impelled by the desire of proving that man could be entirely independent of his kind, retired to the shores of Walden Pond, near Concord, Mass., and there built a hut with his own hands and kept it in order for two years. His livelihood was gained by the cultivation of a few acres, by his labor as a surveyor and by odd jobs as carpenter, etc., for his neighbors. His vaunted independence was still far from realization, but this life of a recluse gave him time for introspection. He read and wrote a great deal

and became very familiar with the wild life of the neighborhood. Birds answered his call and beasts approached him without fear, as in the case of Saint Francis of Assisi. 'Walden' is the record of his experiences and the key to his mental processes during that interesting period. Because of the author's high standing as naturalist, litterateur, poet and above all as interpreter of nature the work is of the greatest interest and has also great psychological value. The work is free from the pedantry of science, is replete with interesting facts in natural history, not, however, retailed disjointly. The permanent interest of the work, one of the greatest of woodland books and one of the most original works in American literature, is due to the variable charm, contradictions and surprises in which it abounds as does nature herself. Consult the work in the new edition of Thoreau's works (Boston 1906) and Thoreau's 'Walden' (in 'Macmillan's Pocket Classics,' New York 1911).

WALDEN UNIVERSITY, an institution for the education of the colored race, located at Nashville, Tenn. It grew out of a school for adults and children established by the Freedmen's Aid Society; in 1866 it was chartered as Central Tennessee College. It is under the control of the Methodist Episcopal Church. In 1900 the name was changed to Walden University in honor of Bishop John M. Walden. The university includes the following departments: (1) Collegiate department; (2) academic department (preparatory); (3) normal department; (4) commercial department; (5) law department; (6) Braden Bible Training School; (7) music department; (8) Meharry Medical College; (9) industrial department. The collegiate department offers two four years' courses, the classical and the scientific; and two corresponding preparatory courses of three years. The normal department offers a course five years in length (instead of four years, as formerly); the first three years are the same in rank as the college preparatory course; the completion of this course entitles the student to the degree of bachelor of pedagogy. The academic department offers a two years' English course and a two years' teacher's preparatory course. In all these courses the daily study of the Bible is required. The law department, which was the first law school for colored students established in the South, has a two years' course. The Braden Bible Training School offers a theological course, correspondence courses in theology and a missionary and deaconess training course. The theological course is two years in length, with a year of post-graduate work; the missionary training course includes studies in industrial department and the medical school. The Meharry Medical College was founded in 1876; it offers a four years' medical course, which may be completed in three years by those holding an A.B., or B.S., degree; the dental college, the pharmaceutical college and the nurses' training school are also a part of the medical department. The industrial department includes the trade schools, the school of domestic science and art and the Walden Industrial School. The trade schools give instruction and practice in carpentry, sloyd, painting, paper-hanging, calcimining, masonry and plastering, and landscape gardening for men, and in sloyd for women; the school of domestic science provides instruction in cooking, sewing, laundry work, etc., for women; the industrial school is for the industrial training of children and serves also as a model school for normal department. When the students attain sufficient proficiency in industrial classes, work is furnished them by which they may pay a portion of their expenses. The students maintain two literary societies. The university buildings (1910) on the campus include the administration building, seven other brick buildings and seven wooden buildings; the medical college is located in another part of the city. The library contains over 6,000 volumes; students of the law department also have access to the State Law Library. The students at the last report numbered about 500, mostly in the medical department. Many of the graduates are teachers; other are doctors and lawyers.

WALDENSES, wŏl-dĕn'sēz, a mediæval sect that owes its origin and name to Peter Waldus (Waldo), a rich citizen of Lyons, although some writers attribute the appellation Waldenses as from *vallée* (valley), and called them *Vaudois,* or dwellers in the valleys, whilst others have traced their origin to the earlier sects of Henricians and Cathari. About 1170 Waldo, moved to repentance for his sins by the sudden death of a friend, came to the determination to imitate the mode of life of the apostles and primitive Christians, gave his goods to the poor and by his preaching collected numerous followers, chiefly from the class of artisans, who, from the place of their birth, were denominated *Leonists,* or the poor of Lyons; *Sabatati* or *Insabatati,* on account of their wooden shoes or sandals (*sabots*); *Humiliatists,* on account of their profession of humility; and were often confounded with the Cathari, Patarenes, Albigenses, and others, whose fate they shared. Their chief strongholds were, and still are, in the mountain tract of the Cottian Alps, southwest of Turin. In their fanatical contempt of the clergy and their opposition to the Roman priesthood the Waldenses resembled other sects of like character in the Middle Ages; but, going beyond the design of their founder, which was merely to preach penance and a life of poverty, they made the Bible alone the rule of their faith, and rejecting whatever was not founded on it as not conformable to apostolical antiquity, they renounced entirely the doctrines, usages and traditions of the Roman Catholic Church and formed a separate religious society. They were, therefore, excommunicated as heretics at the Council of Verona in 1184, but they did not suffer a general persecution until the war against the Albigenses, whom they closely resembled in the extravagances of their doctrines and customs, after they had spread and established themselves in the south of France, under the protection of the counts of Toulouse and Foix. At that time (1209–30) many Waldenses fled to Aragon, Savoy and Piedmont. In Languedoc they were able to maintain themselves till 1330; in Provence, under severe persecution, till 1545, when the parliament at Aix caused them to be driven out of the country; still longer in Dauphiny; and not until the war of the Cevennes were the last Waldenses

expelled from France. In the middle of the 14th century single congregations of this sect went to Calabria and Apulia, where they were soon suppressed; others to Bohemia, where they were called Grubenheimer, because they used to conceal themselves in caverns. They soon became amalgamated with the Hussites; and from them the Bohemian brethren derive the apostolic consecration of their bishops. Their doctrines rest solely on the Bible, which, with some catechisms, they printed in their old dialect, consisting of a mixture of French and Italian. In this language their worship was performed till their old *Barbes* (uncles, teachers) became extinct in 1603. They then received preachers from France and since that time their preaching has been in French. These teachers form no distinct priesthood and are supplied from the academies of the Calvinistic churches. Their rites are limited to baptism and the Lord's supper, respecting which they adopt the views of Calvin. The constitution of their congregations, which are chiefly employed in the cultivation of vineyards and in the breeding of cattle, and which are connected by yearly synods, is republican. Each congregation is superintended by a consistory of elders and deacons, under the presidency of the pastor, which maintains the strictest moral discipline and adjusts small differences. After they had entered into a religious communion with the Calvinists, in the 16th century, they were also exposed to the storm which was intended to sweep away Protestantism, and this was the cause of their extirpation in France and their checkered fate in Piedmont. Those who had settled in the marquisate of Saluzzo were totally suppressed by 1633; and those in the other valleys, under the jurisdiction of the court of Turin, were subjected to severe persecution, often occasioned by their own aggressiveness. Aided by the mediation of the Protestant powers, they finally procured a new, though more limited, ratification of freedom by the treaty concluded at Pinerolo 18 Aug. 1655. The persecution exercised in 1685 through French influence obliged thousands to emigrate into Protestant countries, including the English colonies in North America. In London they united with the French Huguenots; in the Netherlands with the Walloons; in Berlin with the French congregations; and nearly 2,000 went to Switzerland. Some of these returned by force to Piedmont in 1680, and with those who had remained, maintained themselves under many restrictions, to which an end was finally put in 1725 in consequence of Prussian mediation.

The Waldenses were not permitted to enjoy full religious freedom and civil rights until the establishment of the kingdom of Italy, but now they do so not merely in their old valleys of Lucerne, Perusa and Saint Martin, but generally throughout Italy, and they have churches in Turin, Rome, Venice and elsewhere. Their church service is under the direction of a synod. After long negotiations, in the way of which great difficulties were thrown by the opposition of the Tübingen theologians, several hundreds of the above-mentioned fugitives settled in Würtemberg in 1699, where their descendants now form several parishes. They are next to the Calvinists in the simplicity of their worship and in their ecclesiastical constitution, but in intellectual cultivation are behind the other Protestants. (See REFORMATION; RELIGIOUS SECTS). Consult Léger, 'Histoire générale des églises évangéliques des vallées de Piémont ou Vaudoises' (1699); Dieckhoff, 'Die Waldenser im Mittelalter' (1851); Herzog, 'Die romanischen Waldenser' (1853); Melia, 'Origin, Persecution and Doctrines of the Waldenses' (1870); Montet, 'Histoire littéraire des Vaudois du Piémont' (1885); Preger, 'Die Verfassung der französischen Waldenser in der älteren Zeit' (1890); Bompiani, 'Short History of the Italian Waldenses' (1897); Schaff, 'Creeds of Christendom' (1877–78); Lea, H. C., 'History of the Inquisition' (New York 1906).

WALDENSTROM, Peter, Swedish church reformer: b. Luleå, Sweden, 20 July 1838. Having passed the high school 1857, he studied theology, but meantime became professor in a high school, which position he held for over a generation. He was ordained minister of the Swedish Lutheran Church in 1864, but never received a pastoral charge; he resigned his ministerial rank in the state church in 1882, in order to be free to labor for the "evangelical national institution," a movement for the reform of religion in Sweden. Waldenstrom had for years co-operated with the "institution," and had become one of its strongest leaders, zealously promoting evangelical reform by voice and pen. The movement has ever been called by its Lutheran opponents "Waldenströmism." After the death of Rosenius, founder of the movement, Waldenstrom became editor of the journal *Pietisten*, the organ of the evangelical institution. Later the movement took the name Svenska Missions Förbundet (Swedish Mission Union); in its strong reaction from the ecclesiasticism of the state church, it has organized churches on essentially congregational principles. Dr. Waldenstrom was a man of learning and an impressive public speaker. He visited the United States about 1890. He published a great many books and pamphlets, and in 1883 began a new version of the New Testament with notes.

WALDERSEE, väl'dĕr-zā, **Alfred,** COUNT **von,** German soldier: b. Potsdam, Prussia, 8 April 1832; d. Hanover, 5 March 1904. He entered the Prussian artillery of the guard in 1850 and in 1866 was assigned to the general staff and promoted major. During the Bohemian campaign he was connected with the general headquarters, after the peace became a member of the staff of the 10th army corps, and in 1871, at the outbreak of the Franco-Prussian War, was made chief-of-staff to the Grand Duke of Mecklenburg-Schwerin, commander of one of the divisions. Promoted colonel and commander of the 13th Uhlans, his subsequent advancement was rapid. In 1880 he became a general, in 1882 lieutenant-general, in 1888 general of cavalry. Upon von Moltke's resignation as chief of the general staff (1888), Waldersee was chosen as successor; and it was very generally believed that he would follow Bismarck in the chancellorship, for which, however, Count von Caprivi was selected. Waldersee became commander of the ninth army corps in 1891, in 1898 inspector-general, in 1900 field-marshal of the empire.

He married a New York woman, *nee* Miss Lee. At the time of the Boxer outbreak in China (see BOXERS) he was placed in command of the German forces in that country and from 27 Sept. 1900 to 4 June 1901, by approval of the powers, commanded the allied armies there. His activities in China contributed largely to a speedy adjustment of difficulties, while he was at the same time successful in preserving harmony among the allies.

WALDIS, Burkard, väl'dis, German rhyming fabulist: b. about 1490; d. about 1557. He was a Franciscan friar, but on returning from a pilgrimage to Rome, embraced the doctrines of Luther. He wrote a charming drama in Low German, 'The Parable of the Prodigal Son'; translated the 'Psalter' into German verse; and wrote 'Æsopus,' a collection of about 400 rhymed fables and drolleries.

WALDMÜLLER, väld'muhl-ler, **Ferdinand George,** Austrian painter: b. Vienna, 15 Jan. 1793; d. 23 Aug. 1865. He was very successful as a painter of peasant life, and also drew much of his inspiration from the life of childhood. Among his principal works are 'Two Tyrolese Huntsmen Resting' (1829); 'Beggar Boy on the Bridge' (1830); 'Soup Day at the Convent' (1858); 'After School' (1841); 'Sunday Afternoon' (1846); 'Palm Sunday' (1855), and 'Evening Prayer' (1864).

WALDMÜLLER, Robert, pseudonym of CHARLES EDUARD DUBOC, a German poet and miscellaneous writer: b. Hamburg, 17 Sept. 1822; d. 1910 His best work is 'Village Idylls' (1860). Other works are 'Travel Studies' (1860); 'Sorrow and Joy,' a romance (1874); 'Brunhild,' a drama (1874).

WALDO, wŏl'dō, **Daniel,** American Congregational clergyman: b. Windham, Conn., 10 Sept. 1762; d. Syracuse, N. Y., 30 July 1864. He was drafted as a soldier in the army in 1778 and was arrested and captured by the Tories and carried to New York, where he was confined for two months, and then exchanged. After graduation at Yale in 1788 he studied theology, and in 1792 was ordained pastor of the Congregational Church in West Suffolk, Conn. Here he continued till 1809, when he resigned his charge, having for some time acted as a missionary in the States of Pennsylvania and New York. In 1810–11 he preached at Cambridgeport, Mass., after which he served as a missionary in Rhode Island till 1820, and was settled for 12 years at Exeter, Conn.; and afterward resided in the State of New York, without any stated charge. In 1855 he was made chaplain of the House of Representatives.

WALDO, Frank, American meteorologist: b. Cincinnati, Ohio, 4 Nov. 1857. He was graduated from Marietta College, Ohio, in 1878, subsequently studied at Harvard, and in 1882–83 was in Europe on United States government service. Upon his return to the United States he became instructor in astronomy at Radcliffe College, and was later engaged in teaching meteorology at the Corcoran School of Science, Columbian University. He afterward accepted the position of junior professor in the United States Signal Service, and later became professor of meteorology in the United States naval aviation detachment, Massachusetts Institute of Technology. He published 'Modern Meteorology' (1893); 'Elementary Meteorology' (1896), and is author of numerous memoirs and articles on popular science.

WALDO, Lillian D., American social worker: b. Ohio, 1867. She was educated in private schools, in the New York hospital training school for nurses and in woman's medical college. She founded (1893) and was head of the Henry Street Settlement, organized the district nursing work in connection with it and originated the first municipal school for nursing (1902). She became a noted lecturer at the Columbia Teachers' College, the Boston School of Philanthropy and the Boston School for Social Workers, and the plan of a Federal children's bureau originated with her; she became president of the school halls association and also served on the State committee of immigration (1890). The National Institute of Social Science gave her its gold medal, and Mount Holyoke College gave her the degree of LL.D., in 1912. She wrote 'The House on Henry Street' (1915), and numerous pamphlets and reports bearing on her work.

WALDO, Peter, French merchant: b. in the later half of the 12th century. See WALDENSES.

WALDO, Samuel Lovett, American portrait painter: b. Windham, Conn., 6 April 1783; d. New York, 16 Feb. 1861. He had a studio in Charleston, S. C. In 1806 he went to London and painted portraits for many years with success. He returned to New York in 1809 and opened a studio where he became popular as a portrait painter. His works include portraits of Peter Remsen and David Grinn (New York Historical Society).

WALDOBORO, wŏl'dō-bŭr-ō, Me., town, port of entry, Lincoln County, at the mouth of the Medomak River, and on the Maine Central Railroad, about 26 miles southeast of Augusta, and 12 miles west of Rockland. It was settled in 1749 by a colony of Germans, and in 1773 was incorporated. It is in an agricultural section. The chief manufacturing establishments are a shoe factory, machine shop, men's clothing factory and creameries. Formerly the town was noted for its shipbuilding. The principal public buildings are the United States custom-house, the churches, schools and the bank Pop. about 2,656.

WALDSEEMÜLLER, Martin, the scholar who gave America its name: b. at Freiburg, Germany, about 1480; d. about 1521. He was regarded as an able young geographer by the little group of learned men of his native heath. His 'Cosmographiæ Introductio' and his map of the world (the latter prepared as a globe also: "*tam in solido quam plano*"), both published at Saint Dié in 1507, attracted much attention, and originated the name "America." The name confidently proposed for the transatlantic lands, and at the same time actually conferred upon the new "*quarta orbis pars,*" in the little Latin treatise and on the huge wall-map and globe, was so promptly and generally caught up that its originator himself was powerless to recall it. When he issued his 'Carta Marina,' in 1516, he had changed his opinion as to the relative value of the achievements of Columbus and Amerigo Vespucci, for

the word America does not appear on the map of 1516. But it was too late to impose a name less significant and less appropriate. Of the Waldseemüller map of 1507, 1,000 copies were printed, yet all but one were destroyed or lost, and the same fate had overtaken the Carta Itinararia Europæ of 1511, and the Carta Marina of 1516. The Carta Itinararia was the first to be recovered; the more interesting maps of 1507 and 1516 did not come to light until 1901, when their discovery created a sensation. In *The Geographical Journal* for February 1902 we read: «Ever since Humboldt first called attention to the 'Cosmopraphiæ Introductio' no lost maps have ever been sought for so diligently as those of Waldseemüller. It is not too much to say that the honor of being their lucky discoverer has long been considered as the highest possible prize to be obtained among students in the field of ancient cartography. But until the last few months no specimen of either the globe or map has ever been seen or heard of in modern times. A few months ago the geographical world was suddenly startled by a brief announcement that Waldseemüller's long-lost map of 1507, together with another of his of 1516, had been found by Prof. P. Joseph Fischer of Feldkirch, in the library of Prince Waldburg at Wolfegg Castle.» In the excellent work by Fischer and Wieser (see below) it is written that «Johann Schöner had the two Waldseemüller maps bound in the form of an atlas. To this circumstance we owe the preservation of the two precious cartographic monuments, while those copies that were mounted as wall-maps perished — as it seems, without exception — in consequence of their enormous size.» The assertion, so commonly made, that Waldseemüller intended to bestow the name America upon the southern continent only, appears at first sight to find support in the map of 1507, but is disproved by a comparison of the map with the explanatory passages in the 'Introductio.' The Greek form of his own name on the map of 1516 is Ilacomilus, showing plainly his preference for that spelling toward the end of his rather short life. The fact that his name does not stand in any form upon the map of 1507 is additional evidence of juvenility. He appears to have been so young that his signature might have made good work seem less authoritative then. He was perhaps 25 years old when he produced a word that was to fill a place in all languages during all later ages. He was canon of Saint Dié at his death, which was before 1522.

Bibliography.— Fischer and Wieser, 'Die älteste Karte mit dem Namen America'; Humboldt, 'Kritische Untersuchungen'; d'Avezac, 'Martin Hylacomylus Waltzemüller'; Harrisse, 'Bibliotheca'; 'Decouverte'; Fiske, John, 'The Discovery of America' (Boston 1902); and the copy of the original 'Cosmographiæ Introductio' in the New York Public Library.

WALDSTEIN, wâld'stīn, Sir **Charles,** English archæologist: b. New York, 30 March 1856. Educated at Columbia and Heidelberg universities he became university lecturer in classical archæology at Cambridge, England, 1880–82. He was appointed director of the Fitzwilliam Museum there 1883–89, a Fellow of King's College, Cambridge, 1893, and has been Slade professor of fine arts at same college since 1895. As director of the American School of Classical Studies at Athens (1889–95) and professor (1895–97), he directed excavations with signal success at Platæa, Eretria, etc. He was honored with knighthood by George V in 1913. He has written 'Excavations at the Heraion of Aegos'; 'Balance of Emotions and Intellect' (1878); 'Essays on the Art of Phidias' (1885); 'The Word of John Ruskin' (1894); 'The Study of Art in Universities' (1895); 'The Surface of Things' (1899); 'The Jewish Question' (1899); 'The Expansion of Western Ideals and the World's Peace' (1899); 'The Argive Heræum' (1902); 'Art in the Nineteenth Century' (1903) (with L. Shoobridge) 'Herculaneum, Past, Present and Future' (1908); 'What may we Read?' (1912); 'Greek Sculpture and Modern Art' (1914); 'Aristodemocracy' (1916; new ed., 1917); 'What Germany is Fighting For' (1917); 'Patriotism, National and International' (1917).

WALES, wālz, **Prince of,** the title given to the eldest son of the English sovereign since the time of Edward I (1301). From that time he also bore the title of Duke of Cornwall, and later those of Earl of Chester (1393); Prince and High Steward of Scotland, Duke of Rothesay, Earl of Carrick, Baron of Renfrew and Lord of the Isles (1707); and Earl of Dublin (1849). Edward Albert, b. 23 June 1894, succeeded to the titles 6 May 1910, when his father George V became king of England.

WALES, Great Britain, a former Celtic kingdom in the central western peninsula, now an administrative division of England, and a principality, which gives the title of Prince of Wales to the heir-apparent of the British crown. It has an area of 7,466 square miles, divided into 12 counties. For the names, areas and populations of the counties see the article England; and for statistical matter see Great Britain.

Wales is composed of a peninsula, with the island of Anglesey at its northwest extremity, joined at the Menai Strait by two remarkable bridges; a number of smaller islands lie chiefly at a short distance from the southwest coast. The peninsula, washed north and west by the Irish Sea, and south by Bristol Channel, and bounded west by the four English counties, Cheshire, Shropshire, Hereford and Monmouth, is 135 miles long; where widest 95 miles, and where narrowest only 35 miles broad. It is very mountainous, particularly in the north division, where Snowdon, the culminating point of South Britain, rises to the height of 3,571 feet; is intersected by beautiful valleys, traversed by numerous streams, including among others the Severn, which has its source within it; and is rich in minerals, particularly copper in the north, and coal and iron partially there also, but much more extensively in the south. The Silurian formation, so called after the Silures, the ancient inhabitants of the principality, covers more than two-thirds of the whole surface, extending continuously from the mouth of the Conway to the vicinity of Saint David's Head; but is succeeded in the south by the Old Red Sandstone, above which lies the mountain-limestone and the large and valuable coal-field. Besides the Severn, the principal rivers are

the Dee, which has part of its lower course in Cheshire; the Clwyd, in Denbigh and Flint; the Conway, forming the boundary between Denbigh and Carnarvon; the Dovey and the united Rheidiol and Ystwith, which have their mouths near the centre of Cardigan Bay; the Teify, separating Cardigan on the north from Carmarthen and Pembroke on the south; the Cleddy and Cleddeu, remarkable chiefly from contributing, by their junction, to form the splendid estuary of Milford Haven; the Towy and Bury, which both fall into Carmarthen Bay; the Ebwy and Taf, which have a common estuary in Bristol Channel; the Romney, which forms part of the boundary between Wales and England; and the Usk and Wye, which, though rising in the principality, have only the earlier part of their course within it. The lakes are numerous, but the largest, Bala, is only four miles long and scarcely one mile broad. The climate is moderate and equable, though somewhat keen in the loftier districts. In all the counties humidity is in excess, the average fall of rain in the principality being 34 inches, while that in England is only 22. Both climate and surface render Wales more adapted for pasture than agriculture. The soil seldom possesses great natural fertility, except in some of the vales, of which those of the Clwyd in the north, and of Glamorgan in the south, are celebrated for productiveness. The latter, rather a plain than a vale, is of some extent and grows excellent wheat. The system of agriculture might be improved. The minerals are valuable and the south contains some of the largest coal and iron works in the kingdom, as well as the copper works of Swansea. Of manufactures, the most important are woolens. The principal articles are flannel, for which the principality has long been famous, cloth chiefly of a coarser description and hosiery. The inhabitants are almost purely Celtic, being the descendants of the early Britons, who were able to maintain themselves here when the rest of the country was overrun by the Germanic invaders. One of the most striking native features is the female dress, consisting generally of a plain or checked gown, a mantle, a handkerchief of gay colors around the neck and shoulders and a black beaver hat, broad-brimmed and tapering to the form of a truncated cone. All classes are distinguished by civility and hospitality. Many curious superstitions, handed down by immemorial custom, still retain their hold. The Welsh cherish their Brythonic or Cymric language with great affection. They have transplanted it to America, where it prevails in some districts and is represented by newspapers. In 1891 there were in Wales 508,000 people who knew no English, or at least habitually spoke Welsh. Most of the upper class belong to the Established Church, but the majority are Nonconformists, the most numerous bodies being the Congregationalists, the Calvinistic Methodists and the Baptists. See CELTIC PEOPLES; CYMRI; CELTIC LANGUAGES; and also BRITISH EDUCATION, BRITISH FISHERIES, AGRICULTURE SINCE THE 18TH CENTURY and THE MINING INDUSTRY in the section GREAT BRITAIN.

History.— Previous to the Roman occupation, Wales was chiefly inhabited by three British tribes, called the Silures, Dimetæ and Ordovices. During the later period of the Roman occupation, perhaps from the reign of Diocletian, the subject part of the island was divided into four provinces, of which one, including the country from the Dee to the Severn, was called Britannia Secunda. It was after the invasion of the Saxons that the country acquired a distinctive national character, as the refuge of the vanquished Britons who were gradually driven to the west, and many of whom migrated to Brittany (q.v.), France, whence the name, and similarity of the Breton language to the Welsh. From this period till the final conquest of the country by Edward I there was a succession of petty wars between the rival chiefs or kings into which both countries during a great part of the Saxon period were divided, and some more systematic efforts of the larger monarchy to absorb the smaller. Among the greatest of the Welsh heroes of the early period was Cadwallon. After being defeated by Edwin of Deira, or Northumbria, and compelled to flee to Ireland, he returned and defeated the Saxons in numerous battles, but was at last defeated and slain by Oswald of Northumbria in 635. While the border territories continued to be contested in incessant warfare between the two races, Offa of Mercia built the celebrated dyke (see OFFA'S DYKE) known by his name to guard the marshes which he had conquered. In the middle of the 9th century Roderick, or Rhodi Mawr, succeeded in uniting the whole of Wales into one principality, but he divided it among his sons into three principalities, called respectively Gwynedd (or North Wales), Ceredigion and Dyved (or South Wales), and Powys (composed of parts of the counties of Montgomery, Salop and Radnor). Soon after this the Danes began to invade Wales. The country was again reunited in the 10th century under Howel, surnamed Da, the Good; but as the English monarchy also acquired unity it gradually prevailed over the smaller principality, and Athelstane received tribute as the sovereign of Wales, although his sway in the country was only nominal. The claim of the conqueror being resisted, William invaded the country and compelled the Welsh princes to do homage, but they continued in virtual independence and became troublesome to the succeeding Norman monarchs by allying themselves with their disaffected subjects. William and his successors tried to break their spirit by granting fiefs in Wales to Normans and English on condition of conquest, and Henry I introduced into the country a colony of Flemings. Henry I, Henry II, John and Henry III, all made with various success a series of efforts to reduce the Welsh princes to submission. Llewellyn and David, princes of North Wales, successively did homage for that dominion to Henry III. On the death of David, Llewellyn revolted against Edward I, but was defeated by Henry, and in a subsequent revolt was again defeated and slain by the Earl of Mortimer, 1284. His brother David, who followed his example, was taken and executed. Edward I created his eldest son Prince of Wales, and from this time Wales was united with England.

Wales shows a steady growth in population, gaining nearly 200,000 between 1901 and 1911, when the total was 1,647,290. The estimate for 1918 is 1,805,000.

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WALES, University of (in Welsh, *Prifysgol Cymru*), a British institution established by charter in 1893, and formed by the union or association of three existing colleges, the University College of Wales, Aberystwyth, founded in 1872; the University College of North Wales, Bangor, founded in 1884; and the University College of South Wales and Monmouthshire, Cardiff, founded in 1883. Each of the colleges has a women's hall of residence, that of the last being known as Aberdare Hall. There are no special university buildings apart from those of the colleges, but there are temporary offices at Newport, Monmouth. The university has power to grant degrees in arts or literature, science, law, theology and music; but the constituent colleges do not supply a full course of instruction in each of these susbjects, the necessary courses for the degrees of B.A., and B.Sc., being at present those chiefly provided. As regards theology, instruction is furnished by a number of theological colleges in the principality, at which students may qualify for the degree of B.D. The classes are open to persons of either sex above the age of 16 years. The first matriculation examination of the university was held in 1895. The students number about 1,400, though there was a falling off of about 30 per cent during the war.

WALFISH, wŏl'fĭsh, or **WALVISCH, BAY,** West Africa, a harbor and small territory belonging to Great Britain since 1878, on the coast of German Southwest Africa, close to the parallel of 23° S. The harbor, frequented by whale fishers, is a good one, and is formed by a sandy spit of land which projects northward parallel with the coast, and ends in a point known as Pelican Point. It receives the river Khuiseb at its head and just beyond the northern frontier of the territory is the mouth of the river Swakop, where the German authorities constructed a new harbor, known as Swawkopmund. The enclave is included in Cape Colony for administrative purposes. There is a tramway line to Rooikop and railway communication since 1915 with Swakopmund 21 miles. The area is 430 square miles and the population 3,076, of whom about 144 are white.

WALFORD, wâl'fẽrd, **Lucy Bethia Colquhoun,** English novelist: b. Portobello, Scotland, 17 April 1845; d. 1915. She was married to A. S. Walford of Cranbrooke Hall, Essex, in 1869. Her first novel, 'Mr Smith,' appeared in 1874, and in certain respects it has not been surpassed by any of her later works, although she gained in ease of dialogue and description. A sound ethical purpose underlies all her many novels, among the best of which are 'Cousins' (1879); 'Troublesome Daughters' (1880); 'The Baby's Grandmother' (1885); 'The Archdeacon' (1899); 'Sir Patrick, the Puddock' (1900); 'Charlotte' (1901); 'The Enlightenment of Olivia' (1907); 'Lenore Stubbs' (1908); 'Recollections of a Scottish Novelist' (1910); 'Memories of Victorian London' (1912); 'David and Jonathan on the Riviera' (1914).

WALHALLA, vâl-hăl'lă, **VALHAL,** or **VALHALLA,** the great hall of the Scandinavian gods, the warriors' heaven of the Vikings. Here the heroes slain in battle feasted with Odin, drinking mead from the udder of the goat, Heidrun, and eating the flesh of the boar, Sæhrimnir, which was cooked every day, and became whole again after each daily banquet. The hall was lighted by gleaming swords, roofed with shields and the seats covered with coats of mail. Apart from feasting, fighting their battles over again was the favorite pastime of the heroes admitted to Walhalla. See SCANDINAVIAN MYTHOLOGY.

WALKE, wâk, **Henry,** American naval officer: b. near Portsmouth, Va., 24 Dec. 1808; d. Brooklyn, N. Y., 8 March 1896. He was appointed midshipman in the navy in 1827, was promoted lieutenant in 1839 and in the Mexican War was executive officer on the *Vesuvius*, engaged at the capture of Vera Cruz. He was promoted commander in 1855 and in 1861 was assigned to duty with the Mississippi flotilla, receiving rank as captain in 1862. He commanded the squad of gunboats which assisted Grant at Belmont; was engaged at the battles of Forts Henry and Donelson, Island No. 10 and Fort Pillow; successfully passed the Vicksburg batteries; and in 1863 was transferred to the command of the *Sacramento* and sent in pursuit of the *Alabama*. He was promoted commodore in 1866, rear-admiral in 1870 and in 1871 was at his own request placed on the retired list.

WALKEM, George Anthony, Canadian politician: b. Newry, Ireland, 1834; d. 1908. He came to Canada in his youth, was educated at McGill University and was called to the bar in 1859. As a member of the legislative council (1864–70) he played an active part in securing the admission of British Columbia (1870) and was made a member of the provincial legislature. He was a member of the Cabinet (1872–74), was Premier (1874–76) and in 1882 was appointed a puisne judge of the Supreme Court.

WALKER, Amasa, American political economist: b. Woodstock, Conn., 4 May 1799; d. North Brookfield, Mass., 29 Oct. 1875. A prominent merchant of Boston from 1825 to 1840, he was known also as an abolitionist in 1843, and 1849 visited London and Paris respectively to attend the international peace convention of those years, and in 1848 took a leading part in the formation of the Free Soil party. In 1848 he was a representative in the State legislature, in 1849 State senator, in 1851–52 secretary of State, having been elected by the united Free Soil and Democratic vote. He was a member of the House of Representatives in 1862–63, to complete the unexpired term of Goldsmith F. Bailey. From 1842 to 1849 he was professor of political economy in Oberlin College; and he published 'The Nature and Uses of Money and Mixed Currency' (1857) and 'The Science of Wealth:

A Manual of Political Economy' (1866; 7th ed., 1874).

WALKER, Asa, American naval officer: b. Portsmouth, N. H., 13 Nov. 1845; d. 7 March 1916. He was graduated from the United States Naval Academy in 1866, received promotion to lieutenant in 1870 and to commander in 1894. He was on duty at the Naval Academy in 1873–76, 1879–83, 1886–90 and in 1893–97. In the last-named year he was placed in command of the *Concord* and in 1898 was engaged with her in the battle of Manila Bay. He received rank as captain in 1899 and was assigned to duty at the Naval War College, Newport, R. I. He was a member of the naval examining board at Washington in 1900–01 and in 1903 took command of the *San Francisco*.

WALKER, Benjamin, American soldier: b. England, 1753; d. 13 Jan. 1818. Arriving at an early age in New York, he there became a merchant; served as captain and as aide to Baron Steuben and General Washington in the Revolutionary War. After the war he was secretary to the governor of New York and later was a broker in New York. He was naval officer there during Washington's administration, and was representative in Congress 1801–03. For many years before his death he was manager of the Earl of Brute's great estates in the centre of the State.

WALKER, Francis Amasa, American economist and soldier: b. Boston, 2 July 1840; d. there, 5 Jan. 1897. He was the son of Amasa Walker (q.v.), was graduated at Amherst in 1860, began the study of law, which he gave up to enlist in the Union army, and served through nearly the whole of the Civil War. His rank during the greater part of the war was that of lieutenant-colonel, and in 1865 he was brevetted brigadier-general of volunteers. He taught Greek and Latin at Williston Seminary, Easthampton, Mass., from 1865 to 1868, and in the latter year was connected with the staff of the Springfield *Republican*. After serving as head of the Bureau of Statistics of the Treasury Department, in 1870 he was made superintendent of the ninth census and in 1872 became commissioner of Indian affairs. From 1873 to 1881 he was professor of political economy and history in the Sheffield Scientific School at Yale and in 1877–79 was lecturer at Johns Hopkins University. He was the representative of the United States at the International Monetary Conference, Paris, in 1878. In 1880 he was appointed superintendent of the 10th census. Accepting the presidency of the Massachusetts Institute of Technology in 1881, he continued in that position till his death. He was president of the American Statistical Association from 1882 to 1897 and of the American Economic Association in 1885–92. He was an earnest advocate of international bimetallism, was deeply interested in all economic questions, particularly those concerning wages and profits, upon which he wrote with effective clearness and force. His work has exerted a marked influence upon economic study. His writings include 'The Indian Question' (1874); 'The Wages Question' (1876); 'Money' (1878); 'Money in Its Relation to Trade and Industry' (1879); 'Political Economy' (1883); 'Land and Its Rent' (1883); 'History of the Second Army Corps' (1886); 'Life of General Hancock' (1894); 'The Making of the Nation' (1895); and 'International Bimetallism' (1896). Consult 'Publications of the American Statistical Association,' Vol. V (1896–97), for bibliography and biographical notices.

WALKER, Frederick, English painter: b. London, 26 May 1840; d. Saint Fillans, Perthshire, 4 June 1875. After an ordinary school education he worked for a time in an architect's office, and then pursued his art studies at the British Museum, in an art academy and in the Royal Academy schools. He became an apprentice to Whymper, the wood engraver, in 1858 and soon afterward began to provide drawings for *Good Words*, the *Cornhill Magazine* and other periodicals. He illustrated the 'Adventures of Philip' and the 'Dennis Duval' of Thackeray. He exhibited his first oil picture, 'The Lost Path,' at the Academy in 1863. He was elected an associate of the Old Water-color Society in 1864 and in 1871 he became an associate of the Royal Academy. His principal pictures in oils were 'Wayfarers' (1866), by some considered his best oil-painting; 'Bathers' (1867); 'Vagrants' (1868), in the National Gallery; 'The Old Gate' (1869); 'The Plough' (1870); 'At the Bar' (1871); 'The Harbour of Refuge' (1872), in the National Gallery; and 'The Right of Way' (1875). Among his more numerous works in water-color the following may be mentioned: 'Philip in Church' (1863); 'The Young Patient'; 'The Shower'; 'The Village School'; 'Jane Eyre'; 'Refreshment'; 'Spring'; 'Autumn' (1865); 'The Bouquet' (1886); 'The Gondola'; 'In a Perthshire Garden'; 'The Housewife'; 'The Rainbow'; and 'The Fishmonger's Shop.' Consult Marks, 'Life and Letters of Frederick Walker' (1896).

WALKER, George, Irish Anglican clergyman: b. of English parents in County Tyrone 1618; d. Boyne, 1 July 1690. He was educated at Glasgow University, took orders and in 1674 became rector of Donaghmore, near Dungannon. In April 1689 he was made joint governor of the besieged town of Londonderry after the traitorous governor, Lundy, had been allowed to escape and did much to inspire the heroic defenders in the siege of 105 days. He received the thanks of the House of Commons, and had honorary degrees conferred upon him by Cambridge and Oxford. He fell at the battle of the Boyne, being at the time of his death bishop-designate of Derry. His 'True Account of the Siege of Londonderry' (1689) and 'Vindication' of it are reprinted in Dwyer's 'Siege of Londonderry' (1893).

WALKER, Henry Oliver, American mural painter: b. Boston, 14 May 1843. He studied art in Paris under Bonnat (1879–82) and then opened a studio in New York city where he became noted for his beautiful figure compositions, notably 'Eros et Musa' and 'Musa Regina' (at the National Gallery, Washington), and 'Morning Vision' (at the Metropolitan Museum, New York). His notable mural decorations may be seen in the library of Congress at Washington; in panels at the Massachusetts State House; in the Essex County Court House, New Jersey; in the

Capitol at Saint Paul, Minn.; and in 'Wisdom Attended by Learning,' in the Appellate Court, New York. He received a gold medal at Charleston in 1902 and was made a member of the National Academy the same year.

WALKER, Horatio, Canadian painter: b. Listowel, Ontario, 1858. He was practically self-taught but studied miniature work in Toronto and then went to New York City (1885) where his work was speedily appreciated. His favorite subjects were taken from the life of the French-Canadian people. His work won gold medals at Buffalo, Saint Louis, The Pennsylvania Academy of Fine Arts, Charleston and The Pan-Pacific Exposition at San Francisco. Among his notable works are 'The Harrower' (Metropolitan Museum, New York), 'Oxen Drinking' and 'Ave Maria' (Corcoran Gallery, Washington), 'Sheep Yard by Moonlight' (National Gallery, Washington), 'Sheepshearing' (Albright Art Gallery, Buffalo), 'The Woodcutter' and 'Milking' (Saint Louis Museum). He is a member of the National Academy of Design and of the Royal Institute of Painters in Water-colors of London.

WALKER, Hugh, Scottish author: b. 7 Jan. 1855. He was educated at the universities of Glasgow and Oxford and is professor of English literature at Saint David's College, Lampeter, South Wales. He is the author of 'Three Centuries of Scottish Literature' (1893); 'Greater Victorian Poets' (1895); 'The Age of Tennyson' (1897); 'Biographical Sketch of Lord de Tabley' (1903); 'The Literature of the Victorian Era' (1910); 'Outlines of Victorian Literature' (1913); 'The English Essay and Essayists' (1915). He edited 'The Merry Devil of Edmonton' in 'Temple Dramatists Series,' contributed to 'The Cambridge Modern History' and 'Cambridge History of English Literature,' and to American and English periodicals.

WALKER, James, American college president and Unitarian clergyman: b. Burlington, Mass., 16 Aug. 1794; d. Cambridge, Mass., 23 Dec. 1874. He was graduated from Harvard in 1814, studied for the ministry and was pastor of the Unitarian Church, Charleston, Mass., 1818–39. He was professor of moral and intellectual philosophy at Harvard 1839–53 and president of Harvard University 1853–60. From 1831 to 1839 he edited the *Christian Examiner*. He edited the works of Dugald Stewart and Thomas Reid, published a 'Memoir of Josiah Quincy' (1867) and delivered lectures on 'Natural Religion' and 'The Philosophy of Religion.' He was famous as a pulpit orator.

WALKER, James, American artist: b. England, 3 June 1819; d. Watsonville, Cal., September 1889. He emigrated to the United States and settled in New York City early in life. In 1884 he went to San Francisco to paint a picture for a private gallery. It was a French battle-piece and his success was so complete that he became widely known as a painter of military pictures. His principal works are 'The Battle of Lookout Mountain'; 'The Battle of Chapultepec'; and 'The Repulse of Longstreet at Gettysburg.'

WALKER, James Barr, American clergyman: b. Philadelphia, Pa., 29 July 1805; d. Wheaton, Ill., 6 March 1887. He worked at anything to which he could turn his hand for years but finally studied law in Ravenna, Ohio, was graduated at the Western Reserve College (1831) and engaged in editing several religious papers. At last he abandoned everything for the ministry and was licensed by the Chicago presbytery (1841). He became pastor of a church at Sandusky and also was lecturer at Oberlin College and at the Chicago Theological Seminary. His chief writings are 'The Philosophy of Skepticism and Ultraism' (1857), 'Philosophy of the divine operation in human redemption' (1862), 'Poems' (1862), 'The living question of the Age' (1869) and 'The doctrine of the Holy Spirit' (1870). His writings were translated into many languages.

WALKER, John, English actor and lexicographer: b. Colney Hatch, Middlesex, 18 March 1732; d. London, 1 Aug. 1807. He was for a time engaged by Garrick at Drury Lane, was a leading member of the company at Crow Street Theatre, Dublin, 1758–62 and was at Covent Garden 1762–67. In 1768 he left the stage, and, after conducting a school at Kensington for two years, became a lecturer on elocution. His published works include, among others, 'A Dictionary of the English Language, answering at once to the Purposes of Rhyming, Spelling and Pronouncing' (1775; latest ed., 1888); 'Elements of Elocution' (1781); 'A Rhetorical Grammar' (1785); 'The Melody of Speaking Delineated' (1789); 'A Critical Pronouncing Dictionary and Expositor of the English Language' (1791), his chief work, which was long regarded as a standard for pronounciation.

WALKER, John Grimes, American rear-admiral: b. Hillsboro, N. H., 20 March 1835; d. York Beach, Me., 16 Sept. 1907. He was graduated from the Naval Academy in 1856 and during the Civil War was employed in the blockading service and in the Mississippi squadron, becoming lieutenant-commander in 1862; in 1866 he was promoted to the rank ot commander for gallantry. He was chief of the Bureau of Navigation 1881–88, became commodore in 1889 and commanded the squadron of evolution 1889–93. In 1894 he was appointed to protect American interests in the Hawaiian Islands, was commissioned rear-admiral the same year and retired in 1897. From 1899 he was president of the Isthmian Canal Commission.

WALKER, Jonathan, American advocate of abolitionism: b. Cape Cod, Mass., 1799; d. 1 May 1878. In early life he was captain of a fishing-vessel; was railroad contractor in Florida 1840; aided slaves to escape thence in an open boat 1844, but the party were taken to Key West by a wrecking-sloop, which found them helpless at sea. Walker was carried in irons to Pensacola, held for some time in prison chained to the floor of a dark cell, and on being tried was convicted, fined, condemned to the pillory, branded "S. S." (slave-stealer) on the right hand, and ordered to be confined in prison till the fine was paid. He was liberated after 11 month's imprisonment on payment of the fine by friends in the North. He then for some years delivered lectures on slavery, and in 1850

settled in Muskegon, Mich. Walker's history suggested to Whittier the topic of his 'Man With the Branded Hand.'

WALKER, Leroy Pope, Confederate soldier: b. Huntsville, Ala., 8 Feb. 1817; d. there, 23 Aug. 1884. Educated at the universities of Alabama and Virginia, he was admitted to the bar (1837), practised in Moulton, Ala., served as solicitor of his circuit and was a member of the State legislature and speaker of the house (1847–49). He removed to Huntsville and became leader of the Southern bar. President Davis made him Secretary of War. He resigned (1861) but immediately joined the Southern army only to give up his commission on account of ill health (1863) and to resume his law practice (1865). He was delegate to the Democratic National Convention (1876) and to the Chicago Convention (1884).

WALKER, Mary Edwards, American physician and dress reformer: b. Oswego, N. Y., 26 Nov. 1832; d. 22 Feb. 1919. She was notably in advance of her age in her views on dress reform and suffrage and was the only woman expressly given permission by Congress to wear male attire. At the age of 23 she was a graduate physician, having secured her degree from The Syracuse Medical College and began practice in Columbus, Ohio, but soon returned to Rome, N. Y. When 29 years of age she practically discarded female attire and when commissioned as first lieutenant to serve on the surgical staff she always appeared in male attire. After spending four years on the battlefields she was awarded a Congressional medal of honor for bravery. After the war she became notable for her lectures on dress reform and suffrage and lectured abroad as well as in this country, always appearing in a frock coat or full evening dress. She was a familiar figure in Washington for years. Her death followed sometime after an accident which resulted in a fall on the Capitol steps at Washington and which caused her for a time to remain in the Federal hospital at Fort Ontario.

WALKER, Robert J., American legislator: b. Northumberland County, Pa., 23 July 1801; d. Washington, 11 Nov. 1869. He grew up in the midst of an enlightened community and he was graduated at the University of Pennsylvania, at the head of his class, when he was only 18 years old. A little later he married the granddaughter of Benjamin Franklin, Mary Bache, daughter of Richard Bache and sister of the famous Alexander Bache, one of the founders of the Smithsonian Institution. Walker began the practice of law at Pittsburgh in 1822. Two years later he was an advocate of the election of General Jackson to the presidency and he seems to have exerted considerable influence upon the attitude of Pennsylvania. But the lure of the lower South was too strong for him and he moved to Natchez, Miss., in 1826, where he promptly became one of the leaders of the community. In the land speculations which paralleled the removal of the various tribes of Indians from Mississippi and Alabama, 1830–36, he made what was considered a large fortune. But he was a natural politician and he entered the race for the United States Senate against George Poindexter. It was a spectacular contest which attracted national attention. Walker was successful and once in the Senate, President Jackson promptly made it known that Walker was his friend. From the day of Walker's entrance into national politics, he was a constant and unremitting advocate of the annexation of Texas. In the campaign of 1844, Walker was the chairman of the National Democratic Committee, as we should now say, and he was more responsible than any other man for the nomination and election of Polk. He was Secretary of Treasury in the Polk cabinet and he wrote the tariff of 1846, generally recognized as the best of tariffs before the Civil War. He managed the finances of the government, almost without advice or counsel from the President, during the Mexican War. For the first time in American history, government securities continued to sell at par or above throughout a war. At the close of the Polk administration, Walker became a lawyer and a lobbyist in Washington. He was sent to Europe by the directors of the Illinois Central Railroad to sell bonds and purchase building supplies. He was counsel for certain mining interests in California from which he received a fortune in the form of a fee, in 1858, amounting to some hundreds of thousands of dollars. But he could not keep aloof from politics and President Buchanan made him territorial governor of Kansas in April 1857. Once in Kansas, Walker endeavored so to arrange the tangled affairs of the war-torn Territory that he was to be returned to the United States Senate. But he failed, more because the President withdrew his support than from any lack of wisdom in dealing with the Kansans. When the President withdrew his support Walker resigned and became a public supporter and advocate of Stephen A. Douglas for the Presidency. That completed the breach between Walker and the South where he had always had influence. When Lincoln, and not Douglas, became President, Walker set up a magazine in New York which he called the *Continental Monthly* and in which he supported strongly the cause of the Union. When the war was at its most doubtful crisis, President Lincoln sent Walker as a commissioner of the Treasury to Europe to borrow money on the best terms he could and to discredit the Confederacy in any way he might. Walker succeeded beyond expectation, for he secured loans of $300,000,000 in gold at a time when the government needed gold quite as much as the armies needed men. On the return of Walker to the United States, he became once more a lawyer and lobbyist in Washington and as such had a good deal to do with the passage of the act appropriating the necessary money for the purchase of Alaska. His work and character were not of the kind that enhanced his reputation for integrity. His death was passed almost unnoticed in the press of the country and his burial place has been almost entirely forgotten; but not many men of his generation had more to do with the growth and development of the country. The facts about Walker are to be found only in governmental documents, 'The Diary of James K. Polk,' and contemporary newspapers.

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WALKER, Sears Cook, American mathematician and astronomer: b. Wilmington, Middlesex County, Mass., 28 March 1805; d. Cincinnati, Ohio, 30 Jan. 1853. He was graduated at Harvard College in 1824, taught school near Boston for two years and in 1827 removed to Philadelphia, where also he engaged in teaching. His parallactic tables, first prepared in 1834 for the latitude of Philadelphia, reduced the time needed for computing the phases of an occultation to less than half an hour. In 1837 he was invited to prepare a plan for the organization of an observatory in connection with the Philadelphia High School, and from its equipment in 1840 until 1852 he published in the 'Proceedings of the American Philosophical Society' and the *American Journal of Science* frequent and copious observations and investigations which he had made. In 1841 he published a valuable memoir on the periodical meteors of August and November. In 1845 he took part in the Washington naval observatory, where on 2 Feb. 1847, four months after the detection of the planet Neptune, he made the discovery that a star observed by Lalande in May 1795 must in fact have been this planet. By subsequent alternating computations of Pierce and Walker, the former investigating the perturbations and the latter the orbit, the theory of Neptune was at once placed on a footing comparable with that of the other large planets. In 1847 he was invited to take charge of the longitude computations of the United States Coast Survey, an office in which he continued until his last illness. By the joint labors of Walker and Bache the method of telegraphic longitude determinations was developed and successfully carried out as early as 1849, with greater precision than was attained in Europe 10 years later. The introduction of the chronographic method of recording observations belongs to Walker and Bache. The prosecution of the telegraphic method of longitude soon led Walker to the discovery that the time required for the transmission of the galvanic signal was measurable, and the velocity by no means as high as had been supposed.

WALKER, Thomas, American planter: b. Gloucester County, Va., 25 Jan. 1715; d. 9 Nov. 1794. Having been educated at William and Mary College, he became a physician at Fredericksburg, Va. He made an expedition in 1750 to the region that now is the State of Kentucky — 13 years before Daniel Boone entered it from Tennessee. The Walker Mountains in southern Virginia are named after Walker. He served as commissary general under George Washington in Braddock's army; was commissioned on behalf of Virginia to treat with the Six Nations at Fort Stanwix, N. Y., 1768; commissioner to treat with the Indians at Fort Pitt (Pittsburgh) 1777. He acquired a great estate by marriage toward the close of his life. His son John Walker served with distinction on General Washington's staff during the Revolution; he was United States senator a few months in 1790.

WALKER, Thomas Leonard, Canadian scientist: b. Chinguacousy, Ontario, 30 Dec. 1867. He was graduated at Queen's University with honors in chemistry and mineralogy (1890) and from Leipzig (1895). He was assistant in the geological survey of Canada (1890–93), Fellow in chemistry in the school of mines, Kingston (1893–95), assistant superintendent geological survey of India (1897–1902), and since 1902 has been professor of mineralogy in Toronto University. He has contributed to many scientific publications.

WALKER, Timothy, American clergyman; b. Woburn, Mass., 27 July 1705; d. 1 Sept. 1782. He was graduated at Harvard 1725, and having studied theology became (1730) minister of the Congregational Church at the Penacook plantation (now Concord, N. H.). When, 1740, the title of the Penacook settlers to their land was held by the province of New Hampshire to be null, and new claimants demanded possession, the courts deciding favorably to them, Walker undertook the defense of his people's rights, and thrice visited England to maintain their cause; finally the king in council decided the suit in favor of the people of Penacook. Walker's theological belief was mildly Calvinistic. In the Revolution he was an ardent patriot. He held the pastorate at Concord 52 years. His daughter married Count Rumford. Walker's son Timothy Walker (b. 26 June 1737; d. 5 May 1822) was graduated at Harvard 1822, and at first was a preacher; then became active in political life of the Revolutionary time and the period subsequent — holding many important offices.

WALKER, Timothy, American jurist: b. Wilmington, Mass., 1 Dec. 1806; d. Cincinnati, Ohio, 15 Jan. 1856. He was graduated from Harvard (1826), taught mathematics in Northampton, Mass., studied at Harvard Law School (1829–31), removed to Cincinnati the latter year and was admitted to the bar. He established the Cincinnati Law School with Judge Wright and had charge of it until 1844. He founded the *Western Law Journal* in 1843, and was active in his profession until his death. In 1842–43 he was presiding judge of the Hamilton County Court of Common Pleas. His chief work was 'American Introduction to American Law.'

WALKER, William, American adventurer: b. Nashville, Tenn., 8 May 1824; d. Trujillo, Honduras, 12 Sept. 1860. After study of law and medicine, he was a journalist in New Orleans and San Francisco, and practised law in Marysville, Cal. In 1853 he organized a filibustering expedition against Lower California and the Mexican state of Sonora. On 4 November he arrived at La Paz, made the Mexican governor a prisoner and proclaimed a new régime to the inhabitants of Lower California. In a few weeks difficulties arose. Reinforcements did not appear, desertions greatly reduced his force, and he was obliged to retreat across the border into California and surrender himself and band to a detachment of United States regulars. He was tried (May 1854) at San Francisco, for violation of the neutrality laws, and acquitted. But Walker was soon planning new conquests. Taking advantage of insurrectionary troubles in Nicaragua, and to some extent abetted by American capitalists interested there, he landed at Realejo, 11 June 1855; and, having with his followers and a few natives won some trifling battles, managed to accomplish a peace which recognized Rivas, leader of the party favored

by Walker, as President and Walker himself as generalissimo. Many Southerners joined him as recruits, and on 1 March 1856 he had, it is said, 1,200 troops. The Pierce administration proclaimed the neutrality laws, and made attempts at prosecution, but expeditions sailed with comparative freedom from San Francisco and New Orleans to Walker's aid. Finally, Vijil, a priest, the diplomatic representative of what was really the Walker government, was received 14 May 1856, though the North and many conservative Southerners condemned the action. The envoy did not remain long at Washington. Rivas absconded, and in June Walker got himself elected to the Presidency. In September he published a decree repealing all laws against slavery, which had not existed in Nicaragua for 32 years. Undoubtedly he believed that such a procedure would obtain for him valuable support in the slave States. But the United States government declined to recognize him or his ministers, and his arbitrary acts provoked a native insurrection. At last he was held between Lake Nicaragua and the Pacific by an allied army of native Nicaraguans and Costa Ricans, and on 1 May 1857 he gave himself up to Com. C. H. Davis of the United States sloop-of-war *Saint Mary's*, under a treaty of capitulation obtained from Costa Rica. He was taken to New Orleans, and quickly began plotting to organize a new expedition. Arrested for violation of the neutrality laws, he was released on bail, which he forfeited, going with about 200 followers, arms and supplies to Greytown, where he arrived 25 November. In early December Commodore Paulding, United States navy, of the *Wabash*, compelled him to surrender. Walker presented himself as a prisoner of state at Washington in January 1858, but President Pierce declined to hold him as a prisoner, on the ground of his illegal apprehension on foreign soil. A. H. Stephens wrote in 1858 that the reason for the opposition to Walker was that "if successful, he would introduce African slavery there" [Nicaragua]. Walker was received with more or less of an ovation in the Gulf States. In October 1858 he sailed again from Mobile, but was arrested at the mouth of the Mississippi, tried at New Orleans and acquitted. In June 1860, with a small force, he went to Trujillo to stir up revolution in Honduras. His followers were reshipped to the United States, while he was condemned and shot. He published 'The War in Nicaragua' (1860), in justification of his acts. Consult Joaquin Miller's poem 'Walker in Nicaragua'; Doubleday, 'Reminiscences' (1886); Roche, 'Story of the Filibusters' (1891).

WALKER, William David, American Protestant Episcopal bishop: b. New York City, 29 June 1839; d. 2 May 1917. He was graduated from Columbia University (1859), from the General Theological Seminary (1862), was vicar of Calvary Chapel, New York (1862–83) and missionary bishop of the northern district (1883–96). He was transferred to western New York (1896) and was appointed by President Cleveland a member of the United States board of Indian commissioners (1897). He also served as a select preacher to the University of Cambridge, England. In 1900 President Roosevelt appointed him one of the special commissioners to investigate the conditions among the Indians of New York State. He was author of 'The Relation of Wealth to Labor,' and 'God's Providence in Life.'

WALKER, William Hultz, American industrial chemist: b. Pittsburgh, Pa., 7 April 1869. He was graduated at the Pennsylvania State College (1890) and the University of Göttingen (1892), was professor of industrial chemistry at Harvard (1905–08) and became identified with the production of high class art glass in America. He was president of the American Electro-Chemical Society in 1910 and is an authority on industrial chemistry in the United States.

WALKER, William Johnson, American philanthropist; b. Charlestown, Mass., 15 March 1790; d. 2 April 1865. He was graduated at Harvard 1810, then studied medicine, and practised as a physician in Charlestown. He became heir to a large estate late in life. His benefactions to colleges and to charitable and benevolent institutions were very liberal, amounting to $1,400,000, of which $400,000 was bestowed during his life.

WALKER, William McCreary, American naval officer: b. Baltimore, Md., 2 Sept. 1813; d. 19 Nov. 1866. He became midshipman in the United States navy 1827; passed midshipman 1833; lieutenant 1838, and while lieutenant commanded a vessel in Wilkes's exploring expedition. He served on the home station 1843–44, and in the Mediterranean squadron 1844–46; commanded the frigate *Constellation* 1855–56. He attained the rank of captain 1862; through the Civil War he served with distinction on the steamer *De Soto* of the Atlantic Coast blockading squadron.

WALKER, William Sidney, English Shakespearean scholar: b. Pembroke, Wales, 4 Dec. 1795; d. 15 Oct. 1846. He was educated at Trinity College, Cambridge, becoming a Fellow of his college in 1820. Unorthodox views regarding eternal punishment prevented him from taking orders, and accordingly he had to resign his Fellowship in 1829. His friend Moultrie edited in 1852 a collection of his 'Poetical Remains,' and W. N. Lettsom compiled from his papers the works entitled 'Shakespeare's Versification, and its Apparent Irregularities explained by Examples from Early and Late English Writers' (1854); and 'A Critical Examination of the Text of Shakespeare, with Remarks on his Language and that of his Contemporaries, together with Notes on his Plays and Poems' (1860), which are of the utmost value to students of Shakespeare and Elizabethan literature.

WALKER, Williston, American church historian: b. Portland, Me., 1 July 1860. He was graduated from Amherst College in 1883 and from Hartford Theological Seminary in 1886. He was professor of church history at the latter institution 1889–1901, and since 1901 has held a similar post at Yale University. He has published 'The Creeds and Platforms of Congregationalism' (1893); 'A History of the Congregational Churches in the United States' (1894); 'The Reformation' (1900); 'Ten New England Leaders' (1901); 'John Calvin' (1906); 'French Trans-Geneva' (1909).

WALKER LINE. See BOUNDARIES OF THE UNITED STATES.

WALKERTON, wâ'kėr-tŏn, Canada, capital of Bruce County, Ontario, 65 miles northwest of Guelph, on the Sangeen River, 32 miles south of Owen Sound, and on the Wellington, Grey and Bruce Railroad. It is a thriving and growing town, with extensive water power, several flour and planing-mills, iron foundry, tanneries, furniture and rope factories and other industrial establishments. It has two newspapers and several banks. Pop. about 3,162.

WALKERVILLE, wâ'kėr-vĭl, Canada, a town of Essex County, Ontario, on the Detroit River, two miles northeast of Windsor, near the outlet of Lake Saint Clair and connected by ferry with Detroit, Mich. It has shipbuilding yards, a distillery, automobile factories, planing-mills, engine and wire works, foundries and other industrial establishments. Pop. about 5,000.

WALKILL RIVER. See WALLKILL RIVER.

WALKING DELEGATE, an official connected with a trade union, whose duty it is to visit the various places at which members of his craft are employed and personally ascertain that no laws of that particular trade guild are violated by the workmen; also, in cases where an unexpected strike has been ordered by the executive board, it devolves on him to notify men connected with the union to cease work. The term became opprobrious and has been largely superseded by business agent. See UNIONISM.

WALKING FISH. See MUD-SKIPPER; SERPENT HEAD.

WALKING-LEAF. See FERNS AND FERN ALLIES; LEAF-INSECT.

WALKING PURCHASE, The. In 1682 William Penn (q.v.) purchased of the Delaware Indians a tract of land in the present counties of Bucks and Northampton, Pa., bounded on the east by the Delaware River and in the interior at a point as far as a man could walk in three days. Penn and a party of Indians started on the walk, beginning at the mouth of Neshaming Creek. At the end of a walk of a day and a half Penn concluded that it was as much land as he wanted, and a deed was given to the lands at that point — about 40 miles from the starting place. In 1737 after Penn's death the tract was increased by a party of expert walkers to a point 70 miles in the interior instead of 40 miles. See DELAWARE INDIANS; PENN, WILLIAM.

WALKING STICK, a cane, wand, stick, or rod prepared for use in walking, either as an assistance in supporting and steadying the walker, or for ornament. The habit of using walking-sticks is of great antiquity; and in modern times the supply of such articles constitutes a large branch of trade in the United States, as well as in European countries, especially in Great Britain, France and Germany. London is a great mart for all kinds of walking-sticks, and over four and one-half million sticks in the raw state, to be afterward dressed and mounted, are annually imported into Great Britain. These consist chiefly of the small stems or canes of certain palms, as the Malacca cane, and others called Whangee and Penang Lawyers; the woody stems of some small species of bamboo also are used, besides straight shoots of orange, cinnamon, myrtle and other shrubs; oak, ash, hazel, sloe, thorn and other native trees and shrubs also are used. The preparation and sale of walking-sticks are extensively carried on in Hamburg, and the finer sorts are richly and tastefully mounted in Paris.

WALKING STICK, or STICK-INSECT, a wingless orthopterous insect of the family *Phasmidæ*, so-called because in its slender, elongated form and greenish-gray hue, it resembles a dry twig so closely as easily to be mistaken for one when not moving. Those of the eastern United States (*Diapheromera femorata*) are also called walking bug and walking twig. Some species are several inches long. They are near relatives of the mantids and are natives of sub-tropical and the warmer temperate regions and walk gently among the branches of trees, reposing in the sun, with their long antennæ-like legs stretched out in front. They feed upon the green parts of plants, but are rarely numerous enough to do much damage. Consult Howard, 'The Insect Book' (New York 1901). See ARALIA.

WALKYRIE, or VALKYR, in Scandinavian mythology, one of a company of nine or more beautiful maidens, attendants of Odin (q.v.), who, clad in brilliant armor and adorned with golden ornaments, ride through the air, order battles, and distribute the death-lots according to Odin's commands. Fertilizing dew drops on the ground from the manes of their horses; light streams from the points of their lances, and a flickering brightness announces their arrival in the battle. With their charming glance they rejoice the glazing eye of the hero, and lead him to Walhalla (q.v.), where they act as his cup-bearers. Two Walkyries, Hrist and Mist, are cup-bearers to Odin himself. The name is derived from the Icelandic Valkyrja, and means literally "chooser of the slain," from valr, the "slain" and kojora, to "choose."

They differ in origin; some spring from Elves and other superhuman beings; some are daughters of princes, who in their lifetime are numbered among the Walkyries, showing all their qualities, and when they die their spirits become Walkyries. They ride generally in companies of three, or of three times three or four times three, and have the gift of changing themselves into swans — hence sometimes called swan-maidens. They often choose noble heroes for lovers. Whoever deprives a Walkyrie of her swan-robe gets her into his power. But the song of the Walkyries sounds terrible, as, sitting on a hill, they weave the fateful battle-web. The Walkyries were frequently confounded with the Norns or Destinies. They were conceived also under the figure of the clouds; thus, Hrist signifies "dark sky," and Mist signifies "quaking." Most of the names of the Walkyries, however, relate to war and battle. The Walkyries were known also as battle-maidens, shield-maidens and wish-maidens.

WALL-CREEPER, a small bird (*Tichodroma muraria*) of the European Alps, which frequents walls and perpendicular rocks in preference to trees, on whose rough trunks its relatives, the creepers (*Certhia*), make their living. It is about six inches long; plumage

light gray, with bright crimson on the shoulders, the larger wing coverts and the inner webs of the secondaries; the rest of the wings black; tail black, tipped with white. Called also spider-catcher.

WALL DECORATION. See MURAL PAINTING.

WALL-EYED PIKE, or **GLASS-EYE,** one of the pike-perch (*Stizostedion vitreum*) of the central part of the United States, so-called in reference to its large staring eyes; also absurdly called salmon or jack-salmon in some parts of the South. Its body is elongate, back arched, head subconic, long; cheeks, gill-covers and top of head more scaly; dorsal spines high; dark olive, mottled with brassy; sides of head vermiculated; first dorsal fin with a large black patch on the hinder margin. Length one to three feet. It reaches its greatest development and abundance in the Great Lakes region and upper Mississippi, but is also found southward, eastward and northward to Georgia, Pennsylvania and Assiniboia, respectively. In lakes it inhabits the deep holes or areas where the bottom has been scoured by inflowing streams. In rivers it loves to hide under logs and rocks in the deep holes beneath dams and falls and amid swiftly flowing waters. It is a predaceous fish and devours all smaller species. The wall-eyed pike is a prolific spawner and great numbers of the fish congregate on shallow, well-cleaned bottoms for this purpose. Because of the fine quality of its flesh and the large size (10 to 30 pounds) which it attains, this fish is highly valued and in the Great Lakes region ranks next to the white-fish in commercial importance. The smaller sand-pike or sauger (*S. canadense*) has a similar but less extended distribution and similar habits. Consult Jordan and Evermann, 'American Food and Game Fishes' (New York 1902).

WALL-FLOWER, a cruciferous herb (*Cheiranthus cheiri*) of southern Europe, where it blooms on rocky cliffs and walls. The plant itself is not handsome, having crowded, twisted, lanceolate leaves, but is cultivated for the sake of its flowers, which are large and in short, head-like, terminal racemes. The petals are four, clawed and spreading, have a velvety surface and range in color through all shades of yellow and orange to a rich mahogany brown. They are frequently variegated with these hues, and might be the "streaked gilly-flowers, which some call nature's bastards," scorned by Perdita, of the 'Winter's Tale.' One of their common names, moreover, is gilly-flowers or wall-gilly-flowers. Wall-flowers are biennials, blooming from early spring until autumn, and are offered for sale in French and English cities during the winter. They have a strong and delicious odor of violets.

The native wall-flower of Australia is a leguminous plant (*Pultenæa daphnoides*). In the United States, a cruciferous plant of dry plains, with orange-yellow large flowers, is known as the western wall-flower (*Erysimum asperum*).

WALL PAINTINGS. See MURAL PAINTING.

WALL PAPER, or **PAPER HANGINGS,** called by the French *papier teint,* ornamental, decorated or colored paper affixed to the walls of houses as a substitute for the ancient tapestry hangings. The Chinese appear to have employed paper for this use from time immemorial, and the English claim to have first introduced the practice into Europe. On the other hand, the French assert that printed paper hangings were first made at Rouen as early as 1620 or 1630 by one François, and that the art was perfected in the latter part of the 18th century by Reveillon in Paris. It has certainly prospered more in France than in any other country; and so much taste and skill have there been developed in the manufacture, that the French papers have been sought for in preference to all others. Some of the Paris factories employed 3,000 or more workmen as early as 1875. Establishments are located in nearly all the large cities of Europe. In the United States the first wall paper factory was established in 1790 by John B. Howell at Albany, N. Y. Paper was at that time made only in sheets, and had to be joined before being printed. Color was then applied by means of a brush to form the background of the design, and the latter was subsequently printed upon the paper from wooden blocks, as many blocks being used as there were colors in the pattern, each block having a part of the pattern upon it in one color. One block was printed the whole length of the paper before the next color was applied. It should be stated that this method of printing by means of blocks still prevails, but only in connection with designs which, on account of their dimensions, or through some other peculiarity, cannot be printed on the cylinder-machines that have practically supplanted block or hand work, as it is termed. The method of applying color to the background by means of a handbrush has, however, been done away with altogether. It does not appear that any other factories were established until about the year 1810, at which time a man named Boriken was engaged in the business. The Howell firm had meanwhile sold out their Albany business to Lemuel Steel, and, after a short experience in New York and Baltimore, had finally, in the year 1820, located at Philadelphia, Pa., where they have been established ever since, the present owners comprising the third and fourth generations engaged in the business. It was not until 1844 that any decided advance was made in the growth of the industry. About that time paper in continuous lengths came into more general use, and the necessity of joining sheets together was obviated. In that year, also, the first machine for printing wall paper was imported from England and introduced into the Howell factory. While very crude, as it printed only a single color, it had a stimulating effect on the business, inasmuch as it enabled goods to be produced at a reduced price, and increased the volume of the business. As near as can be ascertained, the entire production of wall paper in the United States at that time did not exceed $250,000. The second printing apparatus was imported from England in 1846, this one printing six colors. Machines were subsequently built in this country, at first by the machinists connected with wall paper factories, but after a time a specialty of this machine was made by William Waldron of New Brunswick, N. J.

The printing machine of to-day is unquestionably a great improvement on that originally

imported into this country, although the principle of its operation is practically the same. It is designed on lines similar to rotary lithographic and cloth-printing machines, with a large central drum or cylinder. The paper passes over the cylinder, the pattern being printed on it by means of rollers on which the design has been placed, each roller representing one of the colors used in the design. These rollers are registered so accurately that the paper, in passing over the rotating cylinder, receives impressions in correct position from each of the surrounding rollers. The paper is hung up by an automatic process as it leaves the machine, and passes into drying-racks which are usually several hundred feet in length, after which it is rolled up in lengths of 8 to 16 yards, and is ready for market.

While the printing-machine is the most prominent mechanism of the business, yet other factors have contributed largely to the progress made by this industry. Among them are the grounding-machines, which furnish the background color to the paper; the bronzing-machines, which apply bronze powders to certain of the surfaces; the embossing-machines, which give various textures to the goods after they have been printed; the pressing-machines, which are used to emboss the design in relief; the contrivance that is used to hang up the paper after it leaves the printing-machine; and a host of similar devices that enable the manufacturer to produce novel effects and manufacture the goods more rapidly than before, and at a lessened expense. It is these contrivances that have led to the tremendous progress achieved by this industry in the last 60 years, and more particularly within the last 30 years (the pace having been accelerated each year), so that the United States has long been independent of foreign manufacturers. The most notable machine improvements follow: (1) Soon after the introduction of the printing machine one McKernan invented a contrivance for festooning the paper automatically as it leaves the printing-machine and passes on to the drying-racks. This was undoubtedly a long stride in the process of making wall paper, inasmuch as the speed of the printing-machine could be increased to the full capacity of the drying-racks connected with it. (2) The single (or continuous) process of making wall paper was introduced about the year 1870. Formerly the ground color had to be applied by one machine, after which the paper was dried and rolled up and next passed through the printing-machine to receive the impressions of the design thereon. In the continuous process the paper passes through the machine which applies a ground color for the design, and then passes through a drying apparatus that is termed a "hot box," or into drying-racks, and then automatically passes into the printing-machines which applies the colors of the design, saving a double handling of the goods and involving less waste. (3) The method of applying bronze powders to wall paper automatically was introduced about the year 1872, although, as it was conducted in secret for some time by one or two firms, the discovery may have been made at an earlier date. This method reduced the cost of making bronze (otherwise termed gold) papers, and led to an increased demand and output for them. (4) The next discovery was the application to wall paper of bronze powders in a liquid state; that is, mixed with an adhesive material (made from potato-starch) of sufficient density to keep the bronze powders in solution without impairing their lustre. This was first placed upon the market about 1882, and as the new process enabled the use of as many different shades of bronze as there were colors in the design, the opportunity was afforded for producing many new and brilliant effects, and for superseding in a large measure bronze or gold goods made by the former method. While the mechanical part of the business has made vast strides, there is yet another feature that outranks it in importance, and that is the artistic element. The American people have a constant craving for something new, and the manufacturer is taxed to the full extent of his powers to satisfy this demand. On no industry does this demand fall more heavily than on wall paper manufacture, and by no occupation has the demand been more fully satisfied.

WALL OF SEVERUS. See HADRIAN'S WALL.

WALL STREET "CORNERS." Since 1835 the famous corners in the American stock market have been as follows:

YEAR	Stock	Starting price	High price
1835	Morris Canal	30% below par	150
1835	Harlem River R.R.	123	200
1835	Harlem Railroad	60	164
1863	Harlem Railroad	112	180
1865	Prairie du Chien	60	250
1867	Milwaukee & St. Paul	47	111
1869	Gold	A small premium	160
1872	Northwestern	Around par	230
1881	Hannibal & St. Joe.	98 (in one day)	200
1901	Northern Pacific	170 (in one day)	1,000

In recent years these corners have been discouraged, as tending to precipitate a general panic.

WALL-TILES. See TILES.

WALL-TREES, fruit-trees trained on walls for better exposure of the fruit to sunshine, and for sake of the heat radiated from the wall. Brick walls are preferred; and have a great advantage in the regularity with which the nailing can be accomplished; but trees are often trained on stone walls also, and sometimes on the walls of houses. Trees are trained on walls in hot houses as well as in the open air. Flued walls are often used, the fruit being thus partially forced by artificial heat; and screens of various kinds, as of reeds, canvas and oiled paper, are sometimes employed to protect blossoms in spring. Woolen nets also are much used for this purpose, and a net even with wide meshes affords much protection from spring frosts. Wall-trees intended to occupy the wall permanently are generally trained in the nursery with a dwarf stem only five or six inches in length, so that the branches may cover the whole wall, and no available part of it be lost. It is usual, however, in planting to introduce riders alternately with the permanent wall-tree; the riders are grafted or budded on tall stocks, and occupy part of the wall till the wall-trees have become large enough to require it all. The chief modes of training wall-trees are known as fan training and horizontal training. In fan training the

branches are arranged like the spokes of a fan; in horizontal training a main stem is led up, from which they are spread out horizontally on both sides. Different modes are preferred for different kinds of trees, and the art of the gardener is shown in keeping to his plan of training and laying in branches, so as to fill the space and make every part of the wall productive. There is a Dutch mode of training, which consists in leading two chief branches horizontally right and left, and training shoots from them straight up to the top of the wall. Riders are trained frequently in a star-like form, some branches being led downward, to fill the wall as quickly as possible. It is necessary for the gardener, in training wall-trees, to consider the habit of each kind particularly whether fruit is to be expected chiefly on young branches or on the spurs of older branches. Superfluous branches must in all cases be carefully removed, and among these are to be reckoned all fore-right shoots, or branches which project straight from the wall.

WALLA WALLA, wŏl'ą wŏl'ą ("rushing water"), a tribe of the Shahaptian stock of North American Indians, formerly occupying the country about the lower Walla Walla River, and along the east bank of the Columbia River from the Snake nearly to the Umatilla, in Washington and Oregon. Their language resembles that of the Nez Percés. By treaty of 1855 they were assigned to the Umatilla reservation in Oregon, where they numbered about 400 in 1917. See SHAHAPTIAN.

WALLA WALLA, Wash., city, county-seat of Walla Walla County, on the Walla Walla River, 28 miles east of the Columbia River, and on branch lines of the Northern Pacific and the Union Pacific railroads, close to the Oregon line, 150 miles southwest of Spokane. A United States fort was established near the site of the city in 1857, and around this fort grew up a trading post and settlement; it was first called Steptoeville, but when the town was incorporated in 1859 the name of Walla Walla was adopted. It was incorporated as a city in 1862 and received a second charter in 1884. The city is situated about 15 miles west of the Blue Mountain range, at an altitude of 1,060 feet; it is surrounded by the beautiful and fertile Walla Walla Valley, over 100 miles in length, forming a part of the "Inland Empire" between the Rocky and Cascade ranges, and consisting of a belt of agricultural land, the larger part under cultivation, which yields large crops of wheat, oats and barley, as well as alfalfa, vegetables and fruits. The dairy interests are large. In this valley the city of Walla Walla is the centre of trade. It contains an extensive plant for the manufacture of farm machinery and implements, gas and electric-power works, two flourishing mills and lumber mills; and has five banks, of which two are national banks. Among its notable public institutions are the United States Land Office, United States District Court, an Odd Fellows' home for the State of Washington, the Stubblefield home for indigent widows and orphans, with $135,000 of perpetual endowment, and two hospitals. Fort Walla Walla joins the city on the west, and six miles to the west is the monument to the memory of the martyred pioneer and patriot, Marcus Whitman. Walla Walla is also of importance as an educational centre; it has a public library and an excellent system of public schools, including a large high school, and is the seat of the far-famed Whitman College and Academy, a Roman Catholic seminary for girls and an academy for boys, and the Saint Paul's seminary for girls (Protestant Episcopal), while Walla Walla College is located two miles outside the city near the fort. There is a handsome Carnegie library and a commodious Y. M. C. A. building. The city has an excellent supply of pure water from mountain streams, and a first-class system of waterworks owned and operated by the municipality. The government is vested in a mayor, elected annually, and a council of seven; the city officials are mostly elected by popular vote. There are two daily and several weekly newspapers. Pop. 24,200. Consult Lyman, 'History of Walla Walla County' (1901).

WALLABOUT BAY, a small arm of the East River, extending into Long Island at Brooklyn, opposite the southeast corner of Manhattan Island. It is separated from the river by an island, which, with the land bordering the bay, belongs to the United States, and is the site of the Brooklyn navy yard. During the Revolution the British prison-ships were stationed in Wallabout Bay.

WALLABY, a native name applied to various small kangaroos (q.v.), especially those called brush-kangaroos, which frequent dense scrub-jungle and have great leaping powers. One of the largest species is the red-necked (*Macropus ruficollis*), which is 40 inches or more long, with a tail 30 inches in length; it is South Australian, and is represented in Tasmania by the smaller Bennet's wallaby. Several other species occur in Australia and Borneo, one of which (*M. theditis*) is very common and known to the colonists as pademelon (q.v.).

WALLACE, wŏl'ās, **Alfred Russel,** English naturalist and philosopher: b. Usk, Monmouthshire, 3 Jan. 1823; d. 7 Nov. 1913. He was educated at Hertford Grammar School, and afterward articled to a land surveyor and architect. Later when resident at Leicester as English master at the collegiate school he made the accquaintance of Henry Walter Bates, like himself an enthusiastic entomologist, and in April 1848 the two sailed from Liverpool on a journey to the Amazon Valley, which marks an epoch in scientific travel. They ascended the Tocantins in August 1848, and in the following year ascended the Amazon. In March 1850 they separated, Wallace taking the basin of the Rio Negro for his ground and Bates that of the Solimoens or upper Amazon. Wallace returned to England in 1852, and in 1853 published 'A Narrative of Travels on the Amazon and Rio Negro.' Another result of this journey was a small work on 'Palm-Trees of the Amazon and their Uses' (1853). Of still greater importance to the progress of modern biological geography and philosophy was his eight years' residence (1854–62) in the islands of the Malay Archipelago, because it led him to the formulation of his theory of natural selection, and produced that scientific classic, 'The Malay Archipelago, the Land of the Orang-Utan and the Bird of Paradise: a Narrative of Travel, with Studies of Man and Nature' (1867). His natural selection theory

was contained in a paper 'On the Tendency of Varieties to Depart Indefinitely from the Original Type,' which he sent to Mr. Darwin in 1858, and on 1 July of that year it was read at a meeting of the Linnæan Society with a statement of the practically identical theory which Darwin had been elaborating independently for many years. His work in Malaysia is fittingly commemorated by the application of his name to the imaginary line (Wallace's Line) between Bali and Lombok, which, as he showed, marked the boundary between an Asiatic and an Australian fauna in the archipelago. In 1870 he published 'Contributions to the Theory of Natural Selection,' and in 1876 issued the first thoroughly scientific treatise on zoogeography, 'The Geographical Distribution of Animals, with a Study of the Relations of Living and Extinct Faunas as elucidating the Past Changes of the Earth's Surface.' This subject was further developed in the more popular work, 'Island Life, or the Phenomena and Causes of Insular Faunas and Floras, including a Revision and attempted Solution of the Problem of Geological Climates' (1880). 'Tropical Nature and other Essays' (1878) contains suggestive papers on sexual selection, color in nature and similar subjects, and was reissued, with modifications and additions, in one volume with 'Contributions to the Theory of Natural Selection' in 1891. In 'Darwinism: an Exposition of the Theory of Natural Selection, with some of its Applications' (1889), he gives a final and masterly statement of the theory of organic evolution as he conceives it, with abundant illustrations from his first-hand knowledge of the facts. He stands by pure Darwinism, refusing to admit the additional elements, such as sexual selection, which Darwin himself adopted in his later works. He refuses to extend evolution to the development of mind, and he adopts Weismann's views on heredity. In short, he holds by organic evolution only in so far as it is consistent with or required by a spiritual interpretation of man and nature. His position was, therefore, very much higher than that of Darwin, and went far to remove the barriers between materialism and religion.

Wallace's work was by no means confined to natural history. In 1866 he issued a work on 'The Scientific Aspects of the Supernatural'; and in 1875 gave in 'Miracles and Modern Spiritualism' a full statement of his spiritualistic faith. He issued in 1885 a pamphlet entitled 'Forty-five Years of Registration Statistics, proving Vaccination to be both Useless and Dangerous.' He gave evidence before the recent Royal Commission on the subject, and in 1898 published 'Vaccination a Delusion, its Penal Enforcement a Crime,' in which he endeavored to prove that the majority report of the commission is opposed to the best evidence laid before it. In 'Land Nationalization: its Necessity and its Aims' (1882) he compares the landlord-and-tenant system of land tenure with an occupying tenancy under the state, and strongly advocates the latter. A land nationalization society, of which he is president, has been formed to disseminate the principles of his book. 'Bad Times: an Essay on the Present Depression of Trade' (1885) is another contribution to economics. He prepared the volume 'Australasia' (1879) in Stanford's 'Compendium of Geography and Travel,' and to the new issue contributed the first of two volumes on Australasia, dealing with Australia and New Zealand (1893). Other works are 'The Wonderful Century, its Successes and its Failures,' a review of the 19th century (1898); 'Studies, Scientific and Social' (1901); 'Man's Place in the Universe' (1903); 'My Life' (1905); 'Is Mars Habitable?' (1907); 'World of Life' (1911); 'Social Environment and Moral Progress' (1913); 'The Revolt of Democracy' (1914). He was awarded the Royal Medal of the Royal Society in 1868, the Gold Medal of the Société de Géographie in 1870, the Darwin Medal of the Royal Society in 1890, the Founder's Medal of the Royal Geographical Society and the Gold Medal of the Linnæan Society in 1892. Consult Marchant, James, 'Alfred Russel Wallace: Letters and Reminiscences' (London 1916).

WALLACE, Charles William, American teacher of English dramatic literature: b. Hopkins, Mo., 6 Feb. 1865. He was educated at the Western Normal College, the University of Nebraska, where he took his degree in 1898, the University of Chicago, the University of Heidelberg, and took his Ph.D. at Freiburg (1906). He was early known for his Shakespearean studies and (1904–09) did special research work on Shakespeare and the Tudor-Stuart drama in 'European Archives' which he continued on behalf of the University of Nebraska (1909–16). His publications include 'Lyrics for Leisure Moments' (1892); 'The Children of the Chapel at Blackfriars, 1597–1603' (1908); 'Three London Theatres of Shakespeare's Time' (1909); 'Shakespeare and his London Associates' (1910); 'The Evolution of the English Drama up to Shakespeare' (1912); 'The First London Theatre' (1913).

WALLACE, Sir Donald Mackenzie, English writer: b. 11 Nov. 1841; d. Lymington, 10 Jan. 1919. He was educated at the universities of Edinburgh, Berlin and Heidelberg, and at the Ecole de Droit, Paris He was private secretary to the viceroy of India in 1884–89, attended the tsarvich during his tour in India and Ceylon in 1890–91, was director of the foreign department of the London *Times* in 1891–99. He published 'Russia' (1877; new ed., 1905, 1912); 'Egypt and the Egyptian Question' (1883); 'The Web of Empire' (1902), etc.

WALLACE, Henry, American agricultural writer and leader: b. near West Newton, Pa., 19 March 1836; d. Des Moines, 22 Feb. 1916. He was of Scotch-Irish extraction. The first 20 years of his life were spent on his father's farm, in Westmoreland County, Pa. In 1856 he pursued a preparatory course in Geneva Hall, Logan County, Ohio, and, the following year entered the junior class of Jefferson College, Washington, Pa., whence he graduated in 1859. After teaching a year in Columbia College, Kentucky he entered Allegheny Theological Seminary, Allegheny, Pa. Subsequently he continued his theological studies in the United Presbyterian Seminary at Monmouth, Ill. His active service in the ministry was begun in 1863, as pastor of the United Presbyterian congregations of Rock Island, Ill. and Davenport, Iowa, and was married the same year to Miss Nannie Cantwell, of Mansfield, Ohio. In 1871 he assumed the pastorate of

the United Presbyterian Church at Morning Sun, Iowa, which he filled until 1876. In 1877, because of failing health, he retired from the ministry and settled on a farm at Winterset, Iowa. Within a year he was editing a farm page on a local paper. In 1879 he bought an interest in the *Winterset Chronicle*. In 1883 he became editor of the *Iowa Homestead*. In 1895, with his two sons, he founded *Wallace's Farmer* at Des Moines, Iowa, of which he remained in editorial control during the rest of his life. Although this paper was primarily established as an exponent of Iowa agricultural interests, where it wielded a powerful influence, it soon had a circulation which extended far beyond the bounds of that State. Mr. Wallace was appointed by President Roosevelt as a member of the Country Life Commission in 1908, and gave his whole time to the work of that commission for four months. Incidental to his editorial work, he wrote several books which were of practical value, namely, 'Clover Farming,' 'How to Make Good Dirt Roads,' 'The Skimmilk Calf,' 'Trusts and How to Control Them' and 'Uncle Henry's Talks with a Farm Boy,' of which the last mentioned perhaps was most widely circulated and read. In 1910 he was president of the National Conservation Congress. In 1911 he was selected as national chairman of the Men and Religion Movement. In 1913 he was appointed by Governor Clarke, of Iowa, with former Secretary of Agriculture James Wilson, to investigate agricultural conditions in Great Britain. His death occurred 22 Feb. 1916 in the First Methodist Episcopal Church of Des Moines, at a meeting of the Interdenominational Laymen's Missionary Convention, of which he was chairman.

WALLACE, Horace Binney, American scholar: b. Philadelphia, Pa., 26 Feb. 1817; d. Paris, France, 16 Dec. 1856. He was graduated at Princeton (1835); studied medicine, chemistry and law but never adopted a profession and devoted himself to literary pursuits. He traveled in Europe (1849–52). A mental disease impelled him to suicide. He was the author of 'Stanley, or the Recollections of a Man of the World' (Philadelphia 1838); aided Griswold in preparing 'Napoleon and the Marshals of the Empire' (2 vols., 1847); wrote 'Art, Scenery and Philosophy in Europe' (1855); and, with J. S. Clarke Hare, edited 'American Leading Cases in Law' (2 vols., 1847); 'Smith's Leading Cases' (2 vols., 1852), and White and Tudor's 'Leading Cases in Equity' (2 vols., 1852).

WALLACE, John Findley, American civil engineer: b. Fall River, Mass., 10 Sept. 1852. He was educated at Monmouth College and the University of Wooster, and in 1869–70 was engaged in railway service. In 1871 he became assistant engineer of the United States Engineers, and was appointed county surveyor and city engineer in 1878. He has been engaged as chief engineer and superintendent on various railroads since 1879, and in 1891 entered the service of the Central Railroad, becoming general manager of the Illinois Central system in 1902. In 1904 he was appointed chief engineer in charge of building the Panama Canal. On 29 March 1905 he with the other members of the commission resigned, was reappointed on 3 April, but again resigned 24 June 1905. From 1906 he has been prominently identified with important corporation work.

WALLACE, Lewis (better known as "LEW"), American soldier and author: b. Brookville, Franklin County, Ind., 10 April 1827; d. Crawfordsville, Ind., 15 Feb. 1905. He studied law; at the beginning of the Mexican War enlisted as second lieutenant in the First Indiana Infantry; in 1848 began professional practice, which he carried on at Covington, Ind., and Crawfordsville, Ind., and for four years was in the State senate. At the outbreak of the Civil War he was appointed adjutant-general of Indiana and soon afterward colonel of the 11th Indiana Volunteers; on 3 Sept. 1861 was made a brigadier-general of volunteers; and for ability displayed in leading a division at Fort Donelson (q.v.) was made major-general of volunteers 21 March 1862. He participated in the second day's fight at Shiloh, and in the advance on Corinth; was president of the court of inquiry regarding Don Carlos Buell (November 1862); in 1863 prepared the Cincinnati defenses and later was made commander of the Eighth army corps, with headquarters at Baltimore. At the battle of the Monacacy (9 July 1864) he was defeated, but detained the enemy until Wright, with reinforcements, could reach Washington before Early. In 1865 he resumed law practice; in 1878–81 was governor of New Mexico, and in 1881–85 was Minister to Turkey. His fame as a writer rests principally upon 'Ben Hur,' a tale of the time of Christ, to which he devoted some seven years. It was immensely popular. Though his syntax was not always of the best, Wallace had a most charming and unique method of enthusing and holding the reader. The book sold into the hundreds of thousands and has become a standard classic. He also wrote a 'Life' of Benjamin Harrison (1888); and 'The Prince of India' (1893). See BEN HUR.

WALLACE, Sir Richard, British art collector: b. 1818; d. 1890. He is reputed to have been a natural son of Maria, Marchioness of Hertford, wife of the 3d marquis, but during his lifetime he was supposed to have been the son of the 4th marquis, who was but 18 years his senior. However, it was under the auspices of Maria that he was educated at Paris, where he collected many fine *objets d'art*, selling these in 1857 at considerable gain. After this, he devoted himself to assisting the 4th marquis in making elaborate art collections. On the death of the Marquis of Hertford in 1870, Wallace inherited his unentailed property, also the fortune of that lord which included Hertford House, London, a Paris residence, Irish estates at Lisburn and splendid art treasures. During the siege of Paris (1871) Sir Wallace distinguished himself by his philanthropic services to the city, equipping several ambulances, and founding the Hertford British Hospital for the relief of the sufferers. In recognition of his services, he was created a baronet (1871). He sat in Parliament for Lisburn from 1873–85. He was one of the British commissioners to the Paris Exposition in 1878; a trustee of the National Gallery of London, and also of Ireland. He was made Knight Commander of the Bath and Commander of the Legion of Honor. On the death of his wife, the Hertford-Wallace

collection was left to the English nation, which secured Hertford House as its repository.

WALLACE, Sir **William,** Scottish patriot and hero: b. probably Elderslie, Renfrewshire, about 1272; d. London, 24 Aug. 1305. Owing to the want of contemporary Scottish records, the real facts regarding his life and achievements remain in much obscurity, many incidents resting solely on the authority of Blind Harry, who wrote about 200 years later, and can hardly be regarded as a serious historian. Wallace is represented as having been for some years engaged in a partisan war against the English before what is represented by Blind Harry as the turning-point in his career took place, the burning of the town of Lanark and the murder of Hezelrig, the sheriff. This incident is ascribed to May 1297. Soon afterward he attacked Ormesby, the justiciar, while holding a court of justice at Scone, and Bek, bishop of Durham, at Glasgow, whom he put to flight. Among the followers of Wallace about this time was William of Douglas, the representative of a great Border family, which subsequently contributed invaluable aid to the war of independence. Sir Henry Percy and Sir Henry Clifford were sent to repress the Scottish rising. Wallace took most of the northern fortresses, and was besieging the Castle of Dundee, when he heard that the enemy was advancing upon Stirling. He took up a position encompassed by a loop of the Forth in front of the Abbey Craig, a hill near the Abbey of Cambuskenneth. Surrey determined to attack him, and the English crossed the Forth on a narrow bridge from early morn till near noon, while the Scots were drawn up as spectators of their passage on the hill (11 Sept. 1297). When Wallace deemed the enemy sufficiently divided he attacked those who had crossed with his whole force, sending at the same time a detachment to secure and hold the head of the bridge. The victory was complete. Cressingham was killed and Surrey fled to Berwick. After this Wallace appears with the title of guardian of the kingdom, which was temporarily cleared of the English, and is found conducting an invasion, or series of organized raids, into England. In 1298 Edward entered Scotland with an army estimated at 7,000 men-at-arms and 80,000 footmen. Wallace retired before him, wasting the country, but was at length overtaken at Falkirk in a position where he was compelled to fight. He drew up his army on an inclined plain with his horsemen, about 1,000, in the rear (22 July 1298). The footmen were arranged in circles, the bowmen in the centre, and the spearmen in the front rank kneeling. In this order they resisted for a time the attacks of the English men-at-arms, but the circles were gradually broken and the army routed. After this Wallace for a time disappears from the scene. The council of regency which succeeded him carried on the war for some time with spirit; but on 9 Feb. 1304 they and their followers were admitted to King Edward's peace. Wallace was excepted by name. He was then in the country, and every exertion was made to secure his apprehension. It was effected through Sir John de Menteith, governor of Dumbarton Castle. He was conveyed to London, through which he was carried on 22 Aug. 1305. He was put on trial at Westminster before a special commission, and was executed for treason and rebellion, though he had never recognized Edward, and the latter explicitly claimed dominion over Scotland as a conqueror only. He appears in literature in Porter's 'Scottish Chiefs' (1810), and Buchanan's 'Wallace: A Tragedy' (1856). Besides the histories of Scotland and others relating to the period consult the biographies by Carrick (3d ed., 1840); Tyler (2d ed., 1845); Moir (1886), and Muirson (1898); the edition of Blind Harry by Jamison (1820); and Stevenson, 'Wallace Papers' (1842).

WALLACE, William, American manufacturer: b. England, 1825; d. Washington, 20 May 1904. Early in life he came to the United States with his father and established the firm of Wallace and Sons at Ansonia, Conn., which soon became one of the leading manufactories of copper and brass alloys in the United States. Becoming associated with Moses G. Farmer (q.v.), they began the manufacture of a compound telegraph wire, consisting of a steel core and an electrotyped copper covering, thus giving conductivity and strength, combined with lightness. In 1876, at the Centennial Exhibition, he brought out the Farmer-Wallace dynamo machine, with which the buildings were successfully lighted, being the earliest general electric lighting in this country. A year or two later he devised a plate arc lamp for use with this machine, by means of which a number of arc lights could be placed in series on the circuit, thus originating the series method of arc lighting. For several years before his death he was engaged in scientific investigations, especially in work with the microscope.

WALLACE, William Harvey Lamb, American soldier: b. Urbana, Ohio, 8 July 1821; d. Savannah, Tenn., 10 April 1862. He removed with his father to Illinois in 1833, studied law and in 1846 was admitted to the bar. At the outbreak of the Mexican War he enlisted as a private, later becoming adjutant, and served at Buena Vista and in other operations until the end of the war, when he returned to his law practice. He became district attorney in 1853 and in 1861 he was appointed colonel of volunteers in the Union army. He commanded a brigade at Fort Donelson, February 1862, was promoted brigadier-general and in the battle of Shiloh commanded Smith's old division. The brigade withstood an assault of six hours and was last to leave the field, Wallace falling, mortally wounded.

WALLACE, William Vincent, Irish musical composer: b. Waterford, 1 July 1813; d. Château de Bagen, in the Pyrenees, France, 12 Oct. 1865. He gave evidence of great musical ability, became a skilful player on several instruments and in 1829 was organist in Thurles Cathedral. His enthusiasm was stimulated by hearing Paganini play in 1831 and in 1834 he played a violin concerto composed by himself. He went to Australia in 1835 and worked at sheep-farming; but soon returned to music and traveled to New Zealand, where he had a romantic escape from assassination by the Maoris. His later travels proved very profitable from a financial point of view. He returned to London in 1845 and toward the end of that year his popular opera of 'Maritana' was produced at Drury Lane with great success. 'Matilda of Hungary' (1847)

was damaged by an exceedingly bad libretto. After a voyage to America he again settled in England in 1853, and in 1860 'Lurline,' a better work than 'Maritana,' was produced with even greater success at Covent Garden. Other operas were the 'Amber Witch' (1861); 'Love's Triumph' (1862); 'The Desert Flower' (1863); and 'Estrella,' the last left unfinished at his death.

WALLACE, Idaho, city and county-seat of Shoshone County on the Northern Pacific and the Oregon-Washington railroads, 130 miles east of Spokane. It is the centre of the Cœur d'Alène district. In 1892 it was incorporated. Pop. about 3,000.

WALLACEBURG, Canada, town in the province of Ontario, Kent County, on the Pierre Marquette, Grand Trunk and Canadian Pacific railways and on the Sydenham River, 17 miles northwest of Chatham. It has flax, glass and lumber manufacturing interests. Pop. about 3,800.

WALLACE'S LINE, an imaginary line, so called in compliment to Afred Russel Wallace (q.v.), separating the Oriental from the Australian faunas. It passes between the Sulu and Philippine Islands, along the Straits of Macassar and between Lombok and Java. The fauna west of this line is strikingly different from that east of it, although the opposite shores of dividing waters are sometimes only a few miles apart. See ZOOGEOGRAPHY.

WALLACHIA, wŏ-lā'kĭ-ą, southern Europe, a former principality, united with Moldavia in 1861 to form the kingdom of Rumania. See RUMANIA.

WALLACK, wŏl'ąk, **James William,** American actor: b. London, 24 Aug. 1795; d. New York, 25 Dec. 1864. He made his first appearance on the stage when a child. In 1813 he began his permanent career, playing as Laertes in 'Hamlet' at Drury Lane. He made his first visit to the United States in 1818 and subsequently for 20 years lived alternately in England and in the United States, playing at different times in all the principal cities of the Union. In 1820 he became stage manager at Drury Lane and in 1837 opened the National Theatre in New York. This was destroyed by fire in 1839 and in 1852 he opened Wallack's Lyceum, rebuilt as Wallack's Theatre in 1861. His career as actor and manager was uniformly successful and in the presentation of comedy he had few equals. As a manager he was greatly aided by his knowledge of stage-effects and his artistic adaptation of scenery and costumes. Consult Wallack, Lester, 'Memories of Fifty Years' (1889).

WALLACK, John Lester, American actor, son of James William Wallack (q.v.): b. New York, 1 Jan. 1820; d. Stamford, Conn., 6 Sept. 1888. He made his début as an actor in New York in 1847, succeeded his father as manager of Wallack's Theatre, New York, in 1864 and conducted it with great success. He adapted several French comedies to the American stage, and in 1888 retired after having been identified with the American stage as actor and manager for 40 years. He wrote 'Memories of Fifty Years' (1889). Consult Mackay and Wingate, 'Famous American Actors of To-day' (1896).

WALLAS, Graham, English author: b. Sunderland, 31 May 1858. He was educated at Corpus Christi College, Oxford (1877–81), was a classical schoolmaster (1881–90), university extension lecturer (since 1890), lecturer London School of Economics (since 1895), professor in political science, London University (1914), member of Royal Commission on Civil Service (1912–15), Lowell lecturer, Boston (1914). He is the author of one of the 'Fabian Essays' (1889); 'Life of Francis Place' (1897); 'Human Nature in Politics' (1908); 'The Great Society' (1914), etc.

WALLASEY, wŏl'ą-sĭ, England, an industrial town suburban to Liverpool, in Cheshire, two miles northwest of Birkenhead, near the seaward extremity of the Wirral peninsula, protected by the notable Wallasey embankment. The town was destroyed by fire in 1857 and rebuilt. It has a workingmen's institute, a 16th century reorganized grammar school and is noted for its municipal ownership of public utilities, water, gas, electric-lighting, street railways, baths, cottage hospital, etc.

WALLENSTEIN, văl'lĕn-stīn or wŏl'ĕn-stīn (or more recently WALDSTEIN), **Albrecht Wenzel Eusebius Von,** Duke of Friedland and Mecklenburg, and Prince of Sagan, German soldier: b. Hermanic, Bohemia, 15 Sept. 1583; d. Eger, Bohemia, 25 Feb. 1634. He studied under the Jesuits at Olmütz and after accepting the Catholic faith finished his studies at the universities of Altdorf, Bologna and Padua. In 1617, on assisting the Archduke Ferdinand in the latter's war against Venice, he was raised to the rank of count and made a colonel. When Bohemia revolted, he raised a regiment of cuirassiers for the emperor and fought against Thurn and Bethlen Gabor. When the estates of the vanquished Bohemians were confiscated in 1620 and sold to imperial adherents at nominal prices, he purchased extensive tracts, including the domains of Friedland and Reichenberg. In 1623 he was made Duke of Friedland and in 1624 his collective estates were elevated to a principality. He now applied himself to the care of these dominions. When the emperor was involved in new troubles by the Lower Saxon League in 1625 he offered to raise 20,000 men for the imperial service by his own efforts. In return he was to have full control in the hostile provinces. Before he had completed his levy he was named generalissimo and field-marshal, and then set out at the head of 30,000 men to co-operate with Tilly (q.v.). On 25 April 1625 he gained a victory over Count Mansfield at Dessau and when that general proceeded at the close of the year to Hungary to join Bethlen Gabor, he followed and brought Bethlen to conclude a truce. In the campaign of 1627 he conquered Silesia, drove the Danish king out of Germany and forced his way into northern Jutland, bought from the emperor the dukedom of Sagan at a price in which his military expenses were reckoned. The estates of Mecklenburg having been forfeited in the war, he was invested with them, first as security for his expenses and afterward as a regular fief in 1629. The attempt to take Stralsund was wholly unsuccessful (1628). In 1630, owing to the jealousy of the nobles, Wallenstein was deprived of his command.

When Gustavus Adolphus invaded Germany,

Wallenstein attempted to negotiate with him on his own account, but the distrust of the Swedish hero frustrating his intentions, he listened to the earnest entreaties of the emperor and again took the field, having procured a formal capitulation securing to himself almost absolute power. After some partial successes he encountered the king of Sweden at Lützen, 16 Nov. 1632, in which battle Wallenstein was defeated and Gustavus killed. After the death of the Swedish king he had reopened negotiations with the enemies of the emperor, by whose assistance he hoped to place himself at the head of affairs in Germany. The matter proceeded slowly as his offers were received with much distrust, especially by the German princes; he resumed hostilities to make his value felt, then reopened negotiations. His proceedings were known at the court of Vienna; but he was at the head of an army largely consisting of foreigners, many of whose leaders were personally pledged to him alone. The emperor was not strong enough to remove him and was base enough to have recourse to assassination. On 24 Jan. 1634 he signed a secret patent conferring the command of the army on Count Gallas, who was instructed to arrest Wallenstein and his associates and throw them into prison. On 18 February an open proclamation was made commanding the army to obey only Generals Gallas, Piccolomini and others named. Wallenstein left Pilsen with some of his confidential associates on the 23d to take refuge in the fortress of Eger, which he reached on the 24th. Here he was assassinated on the evening of the 25th. The plenipotentiary of Saxony and Brandenburg had reached Zwickau and the plenipoteniary of France Frankfort, on their way to Wallenstein's headquarters, when they received word of his death. The emperor openly rewarded the assassins, among whom were two Scotchmen and two Irishmen, Gordon, Leslie, Butler and Devereux. Wallenstein's overtures to the enemies of the empire have been represented by his partisans as *ruses de guerre.*

A vigorous controversy has been waged over the matter. As an organizer and leader of armies he must be ranked among the great commanders. In a time of excessive confusion he maintained a statesmanlike control of difficult affairs. His career was made the basis of Schiller's trilogy of 'Wallenstein.' Consult the lives by Förster (1834); von Ranke (5th ed., 1895); Aretin (1846); Hurter (1855); Förster's ed. of the 'Briefe Wallensteins' (1828–29); Schebek, 'Die Lösung der Wallensteinfrage' (1881); Bilck, 'Beiträge zur Geschichte Wallensteins' (1886); Schulz, 'Wallenstein und die Zeit des Dreissigjährigen Krieges' (1898). See THIRTY YEARS' WAR.

WALLENSTEIN. This work of Schiller is a massive drama in 10 acts artificially so divided that the first part, called the "Piccolomini," with the introductory poem called "The Camp," is about as long as the second part called "The Death of Wallenstein." It is often wrongly called a trilogy, nor is it strictly right to speak of a "Piccolomini" tragedy. Its central theme is the revolt of the imperial general-in-chief against Kaiser Ferdinand II which led to the defection of his troops and his assassination on the night of 25 Feb. 1634. The tragedy was the outgrowth of studies for Schiller's 'History of the Thirty Years' War,' the first part of which appeared in 1791, but the mass of historical detail was so enormous that it was not completed till 12 Oct. 1798, after two years of intensive work. It is the first, perhaps the greatest, work of the mature Schiller, whose study of æsthetic principles and the philosophy of Kant, of Shakespeare's dramas, of which he translated Macbeth, along with the counsel of his new friend Goethe, made him realize in contrast with his earlier subjective work that strict objectivity is the fundamental law of the highest art. He no longer identifies himself with his favorite character and the hero becomes a stern, though intensely human, inordinately ambitious character of the Napoleonic type, yet lacking the Corsican's impetuous initiative.

Although Schiller was not a scientific historian he divined the nature of the real Wallenstein in spite of prejudiced and defective sources. The general who had conquered Protestant Germany and laid it prostrate at the feet of the kaiser, only to be supinely dismissed by his weak master, has been recalled from private life to save Ferdinand's throne from the successful Swedes. He is beaten at Lützen by Gustavus Adolphus, who loses his life. Retiring to Bohemia he wastes valuable time in negotiations pointing to the end of the war, until the emperor, alarmed at the capture of Regensburg, orders and implores his stubborn, perhaps already disloyal, general to drive back the enemy. It is winter and Wallenstein refuses. He summons his generals, who pledge him their support, which action is misconstrued at Vienna. Secret orders relieving the soldiers of their obedience are sent to Octavio Piccolomini and amid the general defection Wallenstein flees to Eger, where he is assassinated.

Wallenstein was a realist without faith in the noble side of human nature. For him every man has a price. Originally faithful to the kaiser, he learns to despise him after the disgrace of his dismissal and transfers his allegiance, as Schiller makes it, to an ideal of Germany; but his enemies claimed he sought the crown of Bohemia. His dictator's power and his negotiations with the Protestant states caused him to toy with the idea of treason but he lacked the resolution to cross his Rubicon and vacillated; this Schiller has finely delineated in Wallenstein's devotion to astrology and his waiting for the right conjunction of the stars. He underestimates the power of the ideal to which Schiller gave concrete expression in his creation of the rôles of the lovers, Max Piccolomini and the general's daughter, Thekla, neither of whom ever existed. In a certain sense the ideality of these two pure souls destroys Wallenstein at the critical moment when it is thinkable that Max's example would have saved the general. Some critics have condemned the Max and Thekla scenes, but unjustly, for they represent a part of the moral force by which even the elder Piccolomini was undoubtedly animated even though he too is urged on by motives of ambition and a disloyalty to his trusting friend, strongly suggestive of Judas Iscariot. However, it would be wrong to regard Piccolomini merely as a stage villain. He is the living representative of the opposition, of those forces which are concretely expressed by Kaiser Ferdinand, his ministers and

the imperial state. Another remarkable creation of Schiller's is the Gräfin Terzky, whose admiration for her brother-in-law is more nearly love and whose intrigues as a sort of female Mephistopheles or Lady Macbeth reveal the ambitious and treasonable side of Wallenstein's character as in a mirror.

The success of the drama was immediate and sustained and the more so because it afforded so many parallels with the rising career of Napoleon, though of course through no intention of Schiller's. The rimed, "corduroy-road" verse of the "Camp" is followed up by the blank verse of the drama proper, the diction of which is differentiated only in accordance with character, never with mental equipment, as was the classical principle and the stern, forbidding, supposedly taciturn hero displays at times a volubility, which is, to say the least, unexpected. And so it is with all the principal characters, whose speeches are expected to reveal all of what they think and which many keep silent.

Editions.—(First): Wallenstein, Tübingen 1800. Cotta; (Best): Säkular-Ausgabe, Werke 1904—Vol. V, J. Minor; (Critical): in Karl Goedeke's Historischkritische Ausgabe. Vol. XII, Stuttgart 1872; (American School): Max Winkler, Macmillan 1901. For criticism consult Calvin Thomas's 'Life of Schiller' (New York 1909); Wilhelm Scherer in 'History of German Literature' (trans. by Mrs. F. C. Conybeare, New York 1893); Karl Werder, 'Vorlesungen über Schiller's Wallenstein' (Berlin 1899); Gustav Freytag, 'Technik des Dramas' (Leipzig 1898; trans. by E. T. MacEwan, Chicago 1895). There are many English translations of Wallenstein, the most celebrated being by Samuel Taylor Coleridge.

CARL E. EGGERT.

WALLER, wŏl'ẽr, **Edmund**, English poet: b. Coleshill, Hertfordshire (now in Buckinghamshire), 3 March 1606; d. Beaconsfield, 21 Oct. 1687. He was educated at Eton and King's College, Cambridge, and was returned a member of Parliament for Amersham before he was 18. In 1625 he was returned for Chipping Wycombe and he sat for other places in several Parliaments, including the Long Parliament. On the death of his wife in 1634 he courted Lady Dorothea Sydney, whom he celebrated in his verses under the name of 'Sacharissa,' and Lady Sophia Murray, whom he distinguished by the name of 'Armoret,' both without success. In Parliament he at first opposed the court party, but retained his place in the Long Parliament and openly expressed his royalist sentiments after the Civil War began. He was sent as a commissioner from Parliament to the king after Edgehill and soon after this occurred the incident called Waller's plot. Its nature is not clearly understood, though Waller made an abject confession of all he knew, including the names of his confederates, some of whom, his near relatives, were put to death. This event in his life is introduced in Beatrice Marshall's story 'An Old London Nosegay' (1904). He was imprisoned for a year, fined £10,000 and exiled. During this exile the first collection of his poems was published in 1645. In 1653 he obtained permission from Cromwell to return to England and in 1654 he addressed a 'Panegyric to the Lord Protector.' In 1656 he recommended him in another poem to assume the royal title. Shortly after a poem on the death of the lord-protector, he addressed one to the king on his majesty's happy return. The proceedings of Monk apparently had not been anticipated. He again sat in Parliament, at intervals of cessation, till the reign of James II. Burnet says his popularity in Parliament was great, but he did not take pains to understand its business, but only studied to gain applause, being a vain and empty though a witty man. His poetry was celebrated for elegance and polish at a time when these graces had been comparatively little studied, but it is destitute of all great qualities. The one most quoted is 'Go, Lovely Rose.' Consult Gosse, '17th Century Studies' (1897); and Thorn-Drury's 'Waller's Poetical Works' (with biography, 1893).

WALLER, Frank, American artist and architect: b. New York, 12 June 1842. He was educated at the Free Academy in New York, studied art in Rome (1870–71), and the next year made a sketching tour in Egypt. He was a founder and the first president of the Art Students' League and since 1888 has devoted his attention to architecture. Among his paintings may be cited 'Tombs of the Caliphs' (1874); 'A Caravan in the Desert' (1878); 'Eventide: Venice' (1883); 'Hop Picking' (1885). He published 'Report on Art Schools' (1879) and a 'Report' of the Art Students' League.

WALLER, Thomas McDonald, American politician: b. New York, about 1840. Being an orphan newsboy in New York, he was adopted into the family of a resident of New London, Conn., and assumed the family name instead of his own surname Armstrong. He studied law, was admitted to the Connecticut bar 1861, and quickly reached high rank as an advocate. He was elected as Democrat to the Connecticut legislature 1867–68, 1872–76, and in his last term was speaker of the house. He was Connecticut secretary of State 1870, mayor of New London 1873, State attorney 1876–83, governor 1882. He was United States Consul General at London 1885–89. He then returned to the practice of law in New London, and repeatedly refused to again hold office.

WALLIN, vä-lēn', **Johan Olof**, Swedish poet and ecclesiastic: b. Dalarna, Sweden, 15 Oct. 1779; d. Upsala, Sweden, 30 June 1839. He studied at Upsala and in 1806 was pastor of the Royal Military Academy. He subsequently held pastorates at Solna, Ulriksdal and Vesteras and in 1837 was made archbishop of Upsala. His hymns and religious songs are in high repute in Sweden and he was called by Tegnér "David's Harp of the North." Among his poems are 'The Educator,' a didactic poem in Alexandrines; verses on George Washington, 'Homesickness' and 'The Angel of Death,' one of his best-known poems. He was a notable pulpit orator. His collected works in two volumes appeared in 1848.

WALLING, William English, American economic writer: b. Louisville, Ky., 14 March 1877. After graduation at the University of Chicago (1897) he did graduate work in economics and sociology (1899–1900), was factory inspector of Illinois (1900–01) and was resident at the university settlement in New York (1902–05). He is a member of various sociological

societies. His publications include 'Russia's Message' (1908); 'Socialism as It Is' (1912); 'The Larger Aspects of Socialism' (1913); 'Progressivism and After' (1914); 'Socialism and the War' (1915). He edited 'The Socialism of To-Day' (1916) and 'State Socialism Pro and Con' (1917).

WALLINGFORD, wŏl'ĭng-fŏrd, Conn., borough, New Haven County, on the Quinnipiac River and on the New York, New Haven and Hartford Railroad, about 22 miles south of Hartford and 12 miles north of New Haven. The borough has broad, regularly laid-out streets, lined with large elm trees. The chief manufacturing establishments are sterling silver, silver-plate and nickel works, a rubber goods factory and brass goods factories. Britannia and ironware are among the manufactures. The government census gives the number of industrial establishments of the whole town (which includes two villages, East Wallingford and Yalesville, besides the borough) as 70. The town is one of the oldest settlements in Connecticut; it received its present name in 1670. In 1850 a branch of the Oneida Community (q.v.) was located here; for some years it prospered and was largely in control of the town, but on the dissolution of the parent body the Wallingford Community disorganized. The property is now owned by the Free Masons and the State Masonic Home has been erected here. There are two banks and two daily and two weekly newspapers; also six churches, a public high school, the Phelps School for Girls, a number of graded schools and a public library. Pop. 11,155.

WALLINGFORD, Vt., a town in Rutland County, on Otter Creek and the Bennington and Rutland Railway, nine miles south of Rutland, 59 miles southwest of Montpelier and about 11 miles southwest of Killington Peak. Included in it are the villages of Wallingford, South Wallingford and East Wallingford. It has two hotels, four churches, a public high school and manufactures of harness, tinware, coffins and caskets and agricultural implements. Pop. about 1,719.

WALLINGTON, N. J., borough of Bergen County, almost adjacent to Passaic and nine miles north of Newark. It has lumber mills, chemical works and a handkerchief factory. Pop. about 4,500.

WALLIS, wŏl'ĭs, **John,** English mathematician: b. Ashford, Kent, 23 Nov. 1616; d. Oxford, 28 Oct. 1703. He was educated at Emmanuel College, Cambridge, took holy orders and in 1641 became chaplain to a Yorkshire baronet. He was one of the first members of the scientific association which became later the Royal Society and in 1649 was appointed Savilian professor of geometry at Oxford. He was particularly skilful in the art of cryptography, or deciphering; and having by this means been enabled to render considerable service to the royal cause, he was on the restoration of Charles II made one of the royal chaplains. In 1661 he was one of the divines appointed to revise the Book of Common Prayer; and when the Royal Society was founded in 1663 his name was included in the list of the earliest members; he added much to the reputation of that body by valuable contributions to the 'Philosophical Transactions.' Modern algebra owes much of its completeness to his elucidation of the principles. Among his mathematical works the most important are 'Arithmetica Infinitorum'; 'Mathesis Universalis, sive Opus Arithmeticum'; 'Mechanica, sive de Motu Tractatus geometricus'; 'De Sectionibus Conicis Tractatus'; and his 'Algebra.' He also published editions of Archimedes, Ptolemy, Aristarchus and Porphyry. His complete works, including various treatises on theology, were published at Oxford (1692–99).

WALLIS, Sir Provo William Parry, English naval officer: b. Halifax, Nova Scotia, 12 April 1791; d. Funtington, near Chichester, England, 13 Feb. 1892. He entered the British navy as a midshipman in 1804; served against the French and in the War of 1812 with the United States was second lieutenant on the *Shannon*. He was on board this ship in the fight with the *Chesapeake* and upon the disablement of the captain and death of the lieutenant, Wallis took command and conducted the prize to Halifax, receiving promotion to commander in recognition of his services. He was aide-de-camp to the queen in 1847–51 and in the last-named year was promoted rear-admiral. He became vice-admiral in 1857, admiral of the white in 1863 and of the fleet in 1877. Contrary to the usual rule of retirement at the age of 70 Wallis was retained on the active list until his death and for many years he was the only surviving flag-officer who had fought in the Napoleonic wars and in the war with America in 1812.

WALLIS, Severn Teackle, American lawyer: b. Baltimore, Md., 8 Sept. 1816; d. there, 11 April 1894. He was graduated from Saint Mary's College, Baltimore, in 1832 and was admitted to the bar in 1837. He became corresponding member of the Royal Academy of History at Madrid in 1843 and in 1849 went to Spain as United States agent to examine the title to public lands in East Florida as affected by the treaty of 1819. He was elected to the Maryland legislature in 1861 and there took a firm stand against action of the North in regard to the Civil War. He was imprisoned by the Federal government for 18 months, together with other prominent Marylanders, and then released. He resumed his law practice and in 1870 was elected provost of the University of Maryland. He published 'Glimpses of Spain' (1849); 'A Discourse on the Life and Character of George Peabody' (1870), etc.

WALLIS ARCHIPELAGO, Pacific Ocean, a group of islands northeast of Fiji, with an area of 40 square miles. They were placed under a French protectorate in 1887, have a French resident and are in regular communication with Nouméa. Pop. about 6,000, mostly industrious and peaceable Polynesians.

WALLKILL (wâl'kĭl) **RIVER,** a river taking its rise in Sussex County, N. J., and flowing north and northeast through Orange and Ulster counties, N. Y. About six miles from the Hudson it joins the Rondout Creek and below the junction the stream is sometimes called the Wallkill. The Wallkill is about 120 miles in length and furnishes considerable water power.

WALLON, vä-lôn, **Henry Alexandre,** French historian: b. Valenciennes, France, 23

Dec. 1812; d. 13 Nov. 1904. He was educated in the Normal School at Paris and in 1840 was appointed to the chair of modern history and geography at the Sorbonne. He was elected to the Legislative Assembly in 1849 but resigned in the following year; became a member of the National Assembly in the year 1871; and in 1875–76 was Minister of Public Instruction. The complete establishment of the republic was largely due to his amendment, the 'Amendment Wallon,' carried 30 Jan. 1875, which subsequently gave him the sobriquet "Father of the Republic." In 1876 he became a member of the Senate. His writings include 'De l'Esclavage dans les Colonies' (1847); 'Jeanne d'Arc' (2 vols., 1860); 'La Vie de Jésus et son Nouvel Historien' (1864); 'La Terreur, Etudes Critiques sur l'Histoire de la Révolution Francais' (1872); 'Les Représentants du Peuple en Mission, etc.' (1793–94; 5 vols., 1888–90), etc.

WALLOONS. Of these descendants of the ancient Gauls, of whom Cæsar wrote "horum omnium fortissimi sunt Belgæ" (the bravest of all these [tribes] are the Belgians) we write only in their relations to American history. In modern geography, the people speaking the old French, or Romaic language, with many added elements, the Walloons (first so-called in Holland Dutch) inhabit the southern half of bi-lingual and di-ethnic Belgium and portions of France, Luxembourg and Rhenish Prussia. The home of the Belgic Walloons being a tract of country which has been the eternal battle ground of Celt or Frank and Teuton, not being militarily defensible, they have suffered from the invasions of Cæsar, Alva and the German Emperor William of our day. When in 1567 the Spanish army entered with fire and sword, 100,000 of the Protestant people of the Belgic Netherlands fled to England. An equal or greater number were refugees in the Dutch Republic, — here called "foreigners" (Walloons); where, besides several regiments of Walloon soldiers, 70 Walloon churches were formed, whose history is known. In Leyden, hundreds of these refugees who spoke French were neighbors of the Pilgrim Fathers of New England. Led by Jesse de Forest, they applied to King James of England for help to settle as a body in Virginia; but could get no encouragement, except as they would agree to scatter. When the Dutch West India Company was formed, a new ship, the *New Netherland*, was freighted with seeds, cattle and other things necessary in a colony and Jesse de Forest's company of Walloons, that is, French-speaking refugees from the Belgic Netherlands, took passage across the Atlantic. They were under the protection of the armed ship *Mackerel*. Besides daily worship, song and prayer, these people had with them an officer of the Reformed Church (his title being "Comforter of the Sick") by whom four couples were joined in wedlock on the ship, which arrived in the Mauritius (Hudson) River in time to prevent a settlement by and to nullify the claims of the French. On Manhattan, which was named New Avesnes, eight families were left; several at the Walloon's Bocht, or Cove (the Wallabout), on the East River (Brooklyn); and others at the head of navigation in the Iroquois country (Albany); while the four newly-wedded couples were sent on a yacht around the Boompjes Hoek (or Little Tree Corner, now Bombay Hook) into the South, or Delaware River and settled at Gloucester, N. J. These Walloons were the first real colonists or homemakers in the Middle States and the first to till the soil of New Netherland, introducing the peach, pear, quince and the Marguerite, flower or daisy. The first white children born in any of the four States between Delaware Bay and Canada were their offspring. The Dutch women in New Netherland previous to 1624 were wives or kin of fishermen or fur traders, who were not farmers or settlers; there being no military occupation or civil government in New Netherland until 1624. After the first large company of Dutch immigrants, nearly 300 in number, had arrived, the first of several congregations of the Reformed Church in America was organized on Manhattan, with pastor, consistory and administration of the sacrament, in 1628. During two generations the domines, or pastors, were required to preach in French as well as Dutch. When New Netherland first received a civil government, in 1624, Peter Minuit, who had been a church officer in the Walloon Church at Wesel, was appointed governor. Then the official name of Nova Belgica, or New Belgium, or what is now the known area of Middle States, then under one administration, was bestowed. In a few generations, the Walloons were swallowed up by intermarriage in the body of the Dutch; or, after 1685, among the Huguenots; but the first homemakers of our four Middle States were the same stock as the Walloons of 1914–18, who fled so numerously to Wales, England and Holland, because of the German invasion. At Amersfoort, in 1918, they erected a handsome edifice as a memorial of gratitude to the Dutch. The first white child born under the flag of the Dutch Republic in America, 6 June 1625, was Sarah, daughter of Simon de Rapallo, or in Dutch Rapelje. Thousands of Americans, who imagine themselves descendants of the Huguenots from France, could trace their lineage direct from the Walloon refugees of 1567. In the old Belgic Netherlands and in Belgium almost every one of the movements for reform, or revolution, has been led by the Walloons. In Scott's novels, several of his "Flemings" were, as their language showed, Walloons. Consult Griffis, 'The Story of New Netherland' (1909); 'Belgium the Land of Art' (new ed., 1919); Leslie's 'History of Greater New York' (1898); De Forest, 'The De Forests of Avesnes' (1900); and De Forest, 'A Walloon Family in America' (2 vols., p. 705); Poujou, D. J., 'Histoire et Influence des Eglises Wallonnes dans les Pays-Bas' (1902).

WILLIAM ELLIOT GRIFFIS.

WALNUT, a tree of the genus *Juglans* and of the family *Juglandaceæ*. The species, of which about 10 have been described, are natives of the northern hemisphere, being confined to the temperate parts. In America they are found as far south as Mexico. They are characterized by rough bark, compound leaves aromatically fragrant when bruised, staminate flowers in catkins, pistillate flowers in few to

many-flowered racemes and followed by large drupes with inedible husks and hard nuts, the kernels of which are valued in some species for food, dessert or the oil they yield upon expression. A majority of the species are prized for park planting because of their hardiness and the graceful form they acquire when well established. For this purpose the most esteemed in America is probably the black walnut (*Juglans nigra*), which has a range from the New England States to Minnesota and southward to the Gulf States. It is a graceful and imposing tree which often reaches 150 feet in height, has usually an erect trunk and a broad airy round top. It is also valued to some extent for its rough hard-shelled nuts which are often seen in the markets. Its wood is one of the most highly prized native woods, being used extensively for furniture making, interior finish of houses where "natural woods" are used, its deep brown tint making rich contrasting effects with other woods. Several other species also furnish nuts found in various markets where the trees are native and the husks of several are used for dyeing and tanning. The species most esteemed for its nuts is, however, the Persian or "English" walnut (*Juglans regia*), which is indigenous from China to southeastern Europe. It has been cultivated for centuries in the Mediterranean region, whence it has been taken to mild climates throughout the world. The tree is only about half as large as the preceding species but is much the same in appearance. Its nuts have smoother, softer shells and usually finer-flavored kernels. This nut is one of the most important in the world. Only during the closing half of the 19th century, however, has it been grown commercially in the United States and here only in California. The crop marketed in 1915 from this State was officially estimated at about 14,300 tons, worth approximately $4,250,000. Besides these home supplies large quantities are imported from the Mediterranean region but these importations will probably dwindle into insignificance when Californian orchards come into full bearing.

Since the trees seem to be exacting in their demands, the areas in which they can be cultivated are somewhat restricted. They are considered susceptible to frosts after their growth has started though fairly hardy while dormant; they seem to be unable to stand hot weather since the nuts are more or less injured; they seem to fail upon lands in which standing water is nearer the surface than 20 feet, also in soils with hard clay subsoil and in poorly drained soils. They are thus almost restricted at present to the deep alluvial soils of the four southern counties of California, but by planting varieties which vegetate late in the spring and by avoiding the conditions mentioned it is believed that the region of successful cultivation may be extended even to northern counties. The seeds are planted about 12 inches asunder in nursery rows four feet apart, cleanly cultivated, irrigated during midsummer and hardened off by withholding the water in autumn. They will usually be under two feet in height when one year old when they are root-grafted to desirable varieties. The grafts will often grow eight feet during the first year. Either when one year or two years old the plants are set in permanent quarters about 50 feet apart. Little pruning is needed except to correct bad form, the branches being started about four feet from the ground. The orchards are kept cleanly cultivated throughout the season, the first plowing in spring being at least six inches deep. Irrigation is also given if needed; always during the winter. The trees of even the most precocious varieties rarely produce profitable crops before six years old and 10 years is nearer the average age. Trees reach full bearing when about 20 years old and continue for 30 years or more. Some trees in Europe are said to be more than 100 years old. When the nuts begin to fall they are shaken down, gathered by women and children usually and spread on trays for a week to dry. The nuts are then graded into sizes by passing them over sieves after which they are dipped in a bath of salsoda, chloride of lime and sulphuric acid to bleach the brown shells and give them the ecru tint demanded by the market. After dipping they are rinsed in clear water. Formerly sulphur was used for this purpose but it was found to impair the quality of the nuts and has been abandoned. After drying the nuts are again graded into light and dark. The latter with the broken ones are used by confectioners; the former are shipped to market in sacks holding about 110 pounds. Consult United States Department of Agriculture, Division of Pomology, 'Nut Culture in the United States'; University of California Bulletin No. 231.

WALNUT INSECTS. The hickory and locust tree borer (*Cyllene pictus*) is the chief insect preying on the black walnut in the United States. The common June beetle, the larvæ of the luna and the regal moths, several kinds of under-wing moths and altogether 45 species of insects are described as attacking the tree. Consult Packard, A. S., 'Insects Injurious to Forest Trees' (Washington 1890).

WALPI. See TUSAYAN.

WALPOLE, wŏl'pōl, **Horace,** EARL OF ORFORD, English wit and letter-writer: b. London, 5 Oct. 1717; d. there, 2 March 1797. He was the fourth son of Sir Robert Walpole (q.v.). He was educated at Eton and King's College, Cambridge, on leaving which (1739) he traveled two years on the Continent. Returning in 1741 he took his seat in the House of Commons as member for Callington, Cornwall, and sat for various constituencies up to his resignation in 1767. He always took a lively but superficial interest in politics, inclining sentimentally to extreme opinions. His parliamentary career requires no particular record, but it may be mentioned that in 1757 he exerted himself earnestly in behalf of Admiral Byng (see BYNG, JOHN). In 1747 he purchased Strawberry Hill, near Twickenham, where he erected a Gothic villa, laid out the grounds with minute ingenuity, and made it a principal business of his life to adorn and furnish it according to a fantastic but refined and educated taste, with objects of curiosity and antiquarian interest, rare prints, pictures, books and manuscripts. His maintenance was provided for by some sinecure appointments. To his antiquarian taste he added authorship, first in verse and

afterward more extensively in prose, and in 1757 established a private printing-press at Strawberry Hill, at which he printed not only his own works but those of others, his editions often selling at very high prices on account of the small number printed. In 1791 he succeeded his nephew in the peerage. He never took his seat in the House of Lords, and appears to have avoided using his title. His works are numerous. His first publication was a description of Sir Robert Walpole's pictures, printed privately in 1747, under the title of 'Ædes Walpolianæ.' In 1757 a popular satire appeared called 'A Letter from Xo Ho, a Chinese Philosopher at London, to his Friend Lien-Chi, at Peking.' 'Fugitive Pieces in Verse and Prose,' and 'Catalogue of the Royal and Noble Authors of England,' with lists of their works, appeared in 1758. 'Anecdotes of Painting in England' were published in 1762–71. 'The Castle of Otranto' (1764), a romance, regarded as the prototype of the work of the 'School of Terror,' which subsequently became popular, is very variously estimated. Praised by Byron and Sir Walter Scott, it is pronounced by Hazlitt dry, meagre and without effect. 'The Mysterious Mother,' a tragedy, and 'Historic Doubts on the Life and Reign of Richard III,' appeared in 1768. The works on which his reputation now chiefly rests are his 'Letters,' of which the best edition is that edited by Peter Cunningham (1857–59), and 'Memoirs' and 'Journal,' a series embracing the reigns ot George II and III from 1751 to 1783. Walpole is almost unanimously pronounced the best of English letter-writers, whose unfailing ease and vivacity in treating of politics, art, foreign affairs and other topics are unlike anything else in English literature. The memoirs are more bitter and cynical, but both are valued as a storehouse of the more evanescent traits of contemporary history, being full of passing topics and occurrences, anecdotes, characters and portraits. Though keen and able, he was not an accurate or impartial observer. Want of depth and earnestness in his own character, his party prejudices, his vanity and love of effect, tempered all he wrote, and detract from the weight of his evidence. Few writers, however, are more uniformly entertaining. Walpole's manners were affected, both personally and as a writer. He was as fastidiously aristocratic in his personal notions as he was sentimentally liberal in his political opinions, and in both he was probably conventional rather than sincere. Of the value of his writings as a chronicle of current events much has been made, but there is a tendency to ascribe to him elegance alone, to the neglect of his substantial literary merits. The complete works appeared in an edition of 1798. Consult Cunningham's edition of the 'Letters' (1857–59); Warburton's of the 'Memoirs' (1851); Robins, 'Catalogue of the Classic Contents of Strawberry Hill' (1842); Macaulay's essay in the *Edinburgh* for October 1833; Cobbett, 'Memorials of Twickenham' (1872); Seeley, 'Horace Walpole and His World' (1884), and the 'Life' by Austin Dobson (1890; 2d ed., 1893).

WALPOLE, Sir Robert, Earl of Orford, English statesman: b. Houghton, Norfolk, 26 Aug. 1676; d. there, 18 March 1745. He was educated at Eton and King's College, Cambridge, and became a good classical scholar. On the death of his elder brother in 1698 he resigned his scholarship, in 1700 entered Parliament as member for Castle Rising and in 1702 was elected for King's Lynn. He became a leader of the Whig party and soon distinguished himself by attention to business, and, though not an orator, by practical debating power. In 1708 he was appointed Secretary-at-War and entrusted with the management of the House of Commons. He was one of the managers of the impeachment of Sacheverell (q.v.) (1710), though privately opposed to that measure. Soon after this the Whigs were dismissed from office. On the meeting of Parliament in 1712 he was convicted of a high breach of trust and notorious corruption, the charge being due wholly to party hostility. He was expelled from the House of Commons and imprisoned in the Tower. By his party Walpole was regarded as a martyr. He refused to make any submission and wrote a pamphlet in his own defense. He remained in prison, or held his levee in the Tower, till the prorogation. He was returned again for King's Lynn, after the dissolution in 1713 and resumed his place and influence in the House. In the first ministry of George I (1714) he was appointed paymaster of the forces. He was also in 1715 made chairman of the committee to impeach the late ministers, Bolingbroke, Ormonde, Oxford and Stafford. In October he was made First Lord of the Treasury and Chancellor of the Exchequer. In April 1717, a split having occurred in the ministry, Walpole resigned and made himself formidable in opposition. He opposed the quadruple alliance and the South Sea Scheme, in which, however, he did not disdain to speculate and make a fortune. In 1720 he again took office as paymaster of the forces, and was entrusted with the measures rendered necessary by the failure of the scheme. On the resignation of Sunderland he again became Chancellor of the Exchequer and First Lord of the Treasury, 3 April 1721, and for 21 years held the highest office in the state without interruption. During his long administration the Hanoverian succession, to which he was zealously attached, became firmly established, a result to which his prudence and political sagacity largely contributed. He promoted by an enlightened policy the commercial prosperity of the nation, and relieved the weight of taxation by many improvements in the tariff. He was the first English minister after the Restoration to make particular study of commerce and finance, and it was he who laid the basis for the free-trade and colonial policies of Great Britain. To the war with Spain he was decidedly averse. In February 1742, two days before his resignation, he was created Earl of Orford. So long a period of office did not of course pass without opposition. In 1733 his important excise bill failed to pass, and during the later years of his ministry he encountered increasing difficulties. When, after successive defeats in Parliament, he resigned, he was consulted by the king as to his successors and allowed to stipulate for his own immunity. An attack was soon made upon him in Parliament, and a committee of secrecy appointed to inquire into his administration.

The committee's report charged him with having used undue influence at elections, with granting fraudulent contracts, and with peculation and profusion in the use of secret service money. The king exerted himself to frustrate the inquiry, and the committee did not gain credit for impartiality. The prosecution against Walpole was dropped for want of evidence. He took little further part in public affairs, but was frequently consulted by the king. Walpole has been characterized by Burke as an "intelligent, prudent and safe minister." He was ambitious for power, but had above his contemporaries an understanding of true national interests. Consult various standard histories of England; Coxe, 'Memoirs of Sir Robert Walpole' (1798); the studies by Ewald (1877) and John Morley (1890); 'Historical Sketches of the Reign of George II' in *Blackwood's* for April 1868; 'Original Papers' (ed. Macpherson 1775); King, 'Political and Literary Anecdotes' (1818); Macphersion, 'Annals of Commerce,' vol. III (1805); Courtney, 'Parliamentary Representatives of Cornwall' (1889).

WALPOLE, Sir **Spencer,** English historian, son of Spencer Horatio Walpole (q.v.): b. England, 6 Feb. 1839; d. London, 8 July 1907. He was educated at Eton and entered the war office in 1858. He became inspector of the fisheries in 1867, lieutenant-governor of the Isle of Man in 1882 and in 1893–99 was secretary to the post office. He was knighted in 1898. He wrote 'A History of England from 1815' (1878–86); 'The Electorate and the Legislature' (1881); 'Life of Sir John Russell' (1889); 'The Land of Home Rule' (1893), etc.

WALPOLE, Spencer Horatio, English statesman: b. 11 Sept. 1806; d. London, 22 May 1898. He was educated at Trinity College, Cambridge, was called to the bar in 1831 and in 1846 became queen's counsel. He was Home Secretary in 1852 and in 1856–82 sat in Parliament for Cambridge University. He was again Home Secretary for a few months in 1858, and was an unofficial member of the Cabinet in 1867–68. From 1887 until his death he was high steward of Cambridge University.

WALPOLE, Mass., town in Norfolk County, on the New York, New Haven and Hartford Railroad, about 20 miles southwest of Boston. It contains the villages of South Walpole, Walpole and East Walpole. It was settled in the 17th century, but was laid out as a town about 1720, and in 1724 was incorporated. The chief manufacturing establishments are a large paper mill, a furniture and a cotton factory. There are eight churches, a high school and 15 district schools. Pop. 5,490.

WALPOLE, N. H., town in Cheshire County, on the Connecticut River and the Fitchburg Railroad, about four miles below Bellows Falls and 19 miles northwest of Keene. It is in an agricultural region. The place was founded in 1745 on a site granted by Massachusetts in 1735, and in 1752 confirmed or re-granted by New Hampshire. There are six churches, a high school, several graded and district schools and a public library which contains about 6,000 volumes. The bank has deposits amounting to nearly $300,000. Pop. about 2,668.

WALPURGA, väl-poor'gä, **WALBURGA,** or **WALPURGIS, Saint,** German abbess: b. England; d. 778. She was sister of Saint Willibald, first bishop of Eichstadt, in Germany, and niece of Saint Boniface, the apostle of the Germans. She went, like her uncle and brother, to Germany as a missionary and became, about the middle of the 8th century, abbess of a convent at Heidenheim, in Franconia. She must have been a learned woman, as she was considered the author of a Latin description of the 'Travels of Saint Willibald.' After her death she received the honors of a saint, was believed to work many miracles, and chapels in her honor were built in many places. From the circumstance that in German almanacs the name Walpurgis has been accidentally placed, sometimes alone, sometimes together with the names of the apostles Philip and James, against the first of May, the night previous to the first day of May, so famous in German legends for the assembling of the witches, has been called Walpurgis Night. The first of May is an important day for the German cultivator; many contracts are made at this time; the labors of the field assume new activity, etc. It is not strange that, on so important a day, the devil and the witches were supposed to be more active than usual and to assemble in a particular place to organize the work of evil. This superstition, however, may have had its origin in the ancient German mythology. Hence straw was burned in many places on Walpurgis Night, with a view of dispersing the malignant beings — a custom still preserved in some places. The chief convocation of the witches was considered to take place on the Brocken. Many customs connected with the first of May in Germany originated in this superstition.

WALPURGIS-NIGHT, the night preceding Saint Walpurgis Day (1 May), on which, according to the old popular superstition among the Germans, witches rode on broomsticks and he-goats to an appointed rendezvous at the old places of pagan sacrifice — notably the Brocken or highest peak of the Harz Mountains — there to enjoy themselves with their master the devil at the great pagan festival of May-day.

WALRUS (from Swedish *hvalross,* whale-horse), an arctic marine pinniped mammal of the genus *Odobænus,* of which two species are recognized — the Atlantic (*O. rosmarus*), and the Pacific (*O. pacificus,* or *O. obesus*). The walrus is allied to hair seals (see Seals and Sealing), from which it is distinguished by having the upper canine teeth largely developed, and growing from persistent pulps to form tusks. These may attain a length of 15 inches or more, and grow downwards, and slightly inwards. They serve the animal as weapons, as tools in digging up from the sand of the bottom of the sea the mollusks upon which it mainly subsists, and in climbing out upon ice-cakes or rocks of the shore. They are much larger in the males than in the females. The walrus is ordinarily 10 to 12 feet long, with a girth as great, but occasionally attains a length of 20 feet. The muzzle is abruptly truncated, with long and remarkably strong bristly moustaches; small eyes; external ear wanting, though the orifice is distinctly visible; hind limbs short, connected by a membrane which covers the tail; fore limbs strong and stumpy, all with five digits. The

fur is of a tawny brown color, and the hide is so thick that it has been likened to a tough, flexible coat of mail.

Walruses are gregarious and are found on the seashore and on ice floes. They are said to be monogamous, and the female brings forth at nine months one calf, usually on the ice floes. In disposition they are quiet and inoffensive unless attacked, or during the mating season, or when their young are in danger, when they become desperately aggressive and furiously attack the hunters on the ice or in boats. The walrus is now confined to the regions within the Arctic Circle, though its extinct ancestors had a much wider geographical range, occurring numerously in ancient times as far south as Denmark and Nova Scotia in the Atlantic and about the Aleutian Islands on the northwest coast. Owing to reckless slaughter by sealers and whalers, they are greatly decreased even in the Arctic seas, and the few remaining seek unfrequented spots in high latitudes. The tusks yield a valuable ivory, their blubber a fine oil, while the hide is most serviceable. Consult Allen, 'North American Pinnipeds' (Washington 1880) and standard authorities.

WALSALL, wâl'sâl, England, a manufacturing town of Staffordshire, eight miles north-northwest of Birmingham. The environs present much fine scenery and the town is handsomely built. The chief buildings and establishments are a modern parish church, with tower terminating in a lofty spire, and other places of worship; a free grammar, blue-coat charity and other schools; a town-hall and jail; a public library; county court, a handsome structure with a Doric colonnade; a technical school and four public parks. The situation of the town gives it great advantages for carrying on the iron manufacture, which forms a leading industry; the chief articles consisting of ironmongery, including coach and carriage harness mountings, buckles, chains, locks, keys, screws, files, edge-tools, gas-tubes, etc. Saddlery and harness are extensively made and are the staple of the town. There are also brass and iron foundries, machine shops, tanneries and establishments for currying, dyeing and japanning hides, malt-works and clothing factories; and in the vicinity extensive lime-works and both coal and iron pits. Walsall is of considerable antiquity, but the existing town is almost entirely of modern origin. Pop. 92,130.

WALSH, Francis Patrick, American lawyer: b. Saint Louis, Mo., 20 July 1864. He was educated at Saint Patrick's Academy and was admitted to the bar (1889). He was a member of the Kansas City Tenement House Commission (1906–08); president of the Kansas City Civil Service Board (1911); chairman of the Federal Commission on Industrial Relations (by appointment of the President), on which he conducted the investigation of conditions in Colorado (1914); in charge of the case of stock-yard employees (1918); was appointed member of the National War Labor Board (1918). In February 1919 he was one of the delegates dispatched by the Irish Race Convention at Philadelphia to attend the Peace Conference at Paris in an effort to secure a hearing there for the Irish republican delegates. With his colleagues, ex-Governor Dunne of Illinois and Mr. Ryan of Philadelphia, he visited Ireland and was joint author of the report of conditions there, which stirred the English press and public to set about a settlement of the Irish question. He is a member of the American Bar Association and of the Missouri State Bar Association.

WALSH, James Joseph, American physician, lecturer and author: b. Archbald, Pa., 12 April 1865. He was educated at the parish school, WilkesBarre, Pa., Saint John's College, Fordham, N. Y., and the universities of Pennsylvania, Paris, Vienna and Berlin. He was at one time assistant editor of *Medical News* and collaborating editor of *The International Clinics.* Since 1898 he has practised his profession in New York. In 1900–05 Dr. Walsh was adjunct professor of medicine at the New York Polyclinic School, and from 1905 to 1912 was professor of nervous diseases and the history of medicine, and dean of the medical faculty of Fordham University. Since 1906 he has been professor of physiological psychology at Cathedral College, New York City. He has lectured extensively on literary, historical and scientific subjects, and in 1916 was recipient of the Lætare Medal from Notre Dame University. Dr. Walsh is a member of the American Association for the Advancement of Science, the American Medical Association, the New York Historical Society, etc. His published works are 'Makers of Modern Medicine' (1907); 'The Thirteenth the Greatest of Centuries' (1907; 3d ed., 1910); 'History of the New York State Medical Society' (1907); 'The Popes and Science' (1908); 'Education, How Old the New' (1910); 'Pastoral Medicine,' with Austin O'Malley (1906); 'Makers of Electricity,' with Brother Potamian (1909); 'Catholic Churchmen in Science' (1906, 1909); 'Old Time Makers of Medicine' (1911); 'Modern Progress and History' (1912); 'The Century of Columbus' (1914); contributions to 'The Catholic Encyclopedia' (1905–14); 'The Encyclopedia Americana' (2d ed., 1916–19). In 1901 Dr. Walsh received the degree of LL.D from Fordham, in 1909 that of Litt.D. from Georgetown and in 1910 that of Sc.D. from Notre Dame university. He is director of the sociological department of Fordham University and trustee of the Catholic Summer School of America.

WALSH, Robert, American lawyer: b. Baltimore, Md., 1784; d. Paris, France, 7 Feb. 1859. He was educated at the Roman Catholic College, Baltimore, and at the Jesuit College, Georgetown, D. C., traveled in Europe until 1809, and on his return studied law and established a law practice at Philadelphia. Later he entered journalism and in 1811–13 published the *American Review of History and Politics,* the first quarterly issued in the United States. He edited the *American Register* in 1817–18, and in 1819 established the Philadelphia *National Gazette,* which he conducted until 1836. He revived the *American Review* in 1827 and edited it until 1837. He removed to Paris in 1836, was United States consul there in 1845–51 and continued his residence in that city until his death. He wrote 'Letter on the Genius and Disposition of the French Republic' (1810); 'Appeal from the Judgment of Great Britain Respecting the United States' (1819);

'Didactics: Social, Literary, and Political' (1836), etc.

WALSH, Thomas, American critic and poet: b. Brooklyn, N. Y., 14 Oct. 1875. He was educated at Georgetown University and at Columbia University (Ph.D. 1895). At various times Mr. Walsh has served on the staff of 'Warner's Library of the World's Best Literature,' the 'International Encyclopedia,' the New York *Globe,* the *Bookman* and 'The Catholic Encyclopedia.' He composed and read the dedication ode to the Prison Ship Martyrs, Brooklyn, 14 Nov. 1908; the Reunion Poem on the Battlefield of Antietam, 16 Sept. 1910; and poem at the unveiling of the John Carroll Monument at Georgetown, D. C., 3 May 1912. Dr. Walsh is a contributor in prose and verse to English and American magazines and reviews, and has published 'The Crusaders' (1897); 'The Prison Ships and Other Poems' (1909); 'The Pilgrim Kings' (1915); 'Eleven Poems of Rubén Darío' (1916) 'Gardens Overseas and Other Poems' (1917).

WALSH, Thomas James, American legislator: b. Two Rivers, Wis., 12 June 1859. He was educated in the public schools and in 1884 was graduated in law at the University of Wisconsin. He taught school, becoming principal of the high school of Sturgeon Bay, Wis.; in 1884 he began the practice of law at Redfield, S. D., and in 1890 removed to Helena, Mont. Since 1907 he has been member of the law firm of Walsh and Nolan. Mr. Walsh was identified with a number of land and livestock companies in Montana; was Democratic candidate for Congress in 1906 and served as delegate to the Democratic national conventions of 1908, 1912 and 1916. Mr. Walsh was candidate for United States senator in 1910; in 1912 he was elected senator for the term 1913–19 and was re-elected for the term expiring in 1925.

WALSH, William, Irish archbishop: b. Dublin, Ireland, 1841. He was educated at the Catholic University of Ireland and at Maynooth College, and after graduating at Maynooth spent three years on the Dunboyne establishment in post-graduate theological studies. He became professor of theology at Maynooth 1867; vice-president, 1878; president, 1880, chosen by unanimous voice of the Irish bishops. Before the Parliamentary "Bessborough Commission," 1869–70, Walsh, as proctor for the bishops and tenants, conducted their case against the Duke of Leinster, landlord, with great skill and discretion; his acts in this investigation had much influence in determining the tenor of the Land Act of 1881. At the death of Cardinal McCabe in 1885, the clergy chose Walsh vicar-capitular; they also named him to Rome for archbishop of Dublin. The British Cabinet had a different sort of candidate for the place, and the Pope's choice at first seemed to coincide, but the wishes of the Irish clergy and laity at length prevailed. Walsh is considered by the Irish the first archbishop of Dublin since the death of St. Lawrence O'Toole, who has been free from the taint of "Castle influence." He testified before the Parnell Special Parliamentary Commission 1888–89, and did much to discredit Richard Pigott, the perjured witness of the London *Times* and the British government, 1888–89. He has been active in questions of popular education, trade strikes and temperance. He has written much for reviews, and has published many books, e.g., 'De Actibus Humanis,' a treatise on one branch of moral theology; 'Harmony of the Gospel Narrative of the Passion'; 'Liturgical Music of the Mass of the Dead'; 'Grammar of the Gregorian Music.' On questions of secular concern he has published 'A Plain Exposition of the Land Act of 1881; 'Addresses,' on various subjects; 'Addresses on the Irish University Question'; 'Statement of the Chief Grievances of the Catholics of Ireland in the Matter of Education,' etc.

WALSINGHAM, wŏl'sĭng-ăm, **Sir Francis,** English diplomat: b. Chiselhurst, Kent, about 1530; d. London, 6 April 1590. He studied at King's College, Cambridge, and traveled on the Continent until early in the reign of Queen Elizabeth. He was introduced to public service by Cecil. His first embassy was to France, about 1561. He resided in France as Ambassador from August 1570 to April 1573, and on his return was made principal Secretary of State and a privy-councillor, and soon after knighted. In 1578 he was Ambassador to the Netherlands, in 1581 to France and in 1583 to Scotland. After having the chief direction of the measures for the discovery of Babington's conspiracy, he was appointed one of the commissioners for the trial of Queen Mary in 1586. He was afterward made chancellor of the duchy of Lancaster. He retired from public life some time before his death. It is somewhat remarkable that so little is known of Walsingham's career; but he worked in secrecy and dealt mainly in intrigue. He is said to have had 53 private agents and 18 spies at foreign courts, and many stories are told of his diplomatic profundity. In his private character Walsingham is said to have been ascetically strict in his morals and puritanic in his religious zeal. An account of Walsingham's embassy to France appeared in a work by Sir Dudley Digges, entitled 'The Complete Ambassador,' published in 1655; and a work entitled 'Arcana Aulica' has been wrongly ascribed to Walshingham himself.

WALTER, wâl'tẽr, **John,** English publisher: b. 1739; d. Teddington, Middlesex, 16 Nov. 1812. He was first engaged as a coal merchant, in which business he accumulated a considerable fortune, but lost it in subsequent operations as an underwriter. In 1782 his attention was attracted to an invention of one Henry Johnson, who had patented in 1778 and 1780 printing units known as logotypes, which substituted entire words or syllables instead of type characters of single letters. In 1784, having purchased the Johnson patents, he opened a printing office in London known as the Logographic Office, and engaged in publishing books. On 1 Jan. 1785 he issued the first number of a small newspaper, *The Daily Universal Register,* "printed logographically," which was really the first number of the *Times,* though that name was not assumed until 1 Jan. 1788, when *The Times, or Daily Universal Register* appeared, the alternative title being dropped in the succeeding March. The *Times* was not immediately a success, and the logographic process eventually had to be abandoned, but Walter seems to have derived some profit from

his book printing, and gradually the *Times* became a power in the land. In 1786 Walter was convicted of having printed a libel, the offense having been the statement that the dukes of York, Clarence and Cumberland were insincere in their congratulations on the king's recovery. He was sentenced to a year's imprisonment in Newgate, to stand in the pillory for one hour, pay a fine of £50 and to enter into recognizances for his good behavior for seven years. He was subsequently sentenced to a second year's imprisonment before the expiration of the first and further fines of £200 on other libelous charges, but was pardoned after 16 months at Newgate. Broken in health and spirit at his continued misfortunes Walter retired from the management of the business in 1795.

WALTER, John, English editor and publisher, son of the preceding: b. London, 23 Feb. 1776; d. there, 28 July 1847. He was studying for the ministry at Oxford, when in 1797 or 1798 his father summoned him to London to assist in the management of the *Times*. From the date of his assumption of the management a new spirit was manifested in the paper, and in 1803 he became sole manager. He maintained an independent course, which, while it made the reputation of the *Times*, cost its editor the little official patronage it had enjoyed. For 18 years the firm had been printers for the board of customs, but in 1805, in consequence of criticism of Lord Melville's administration of the admiralty department, he was deprived of the employment. His enterprise had increased the circulation of the *Times* from 1,000 to 5,000 copies in 10 years, notwithstanding the continued opposition of the government. In 1805 he made arrangements for obtaining foreign news, and in 1807 sent Henry Crabb Robinson (q.v.) to Germany, the first of the afterward numerous class of special correspondents; and though every measure possible was used by the government to delay his foreign despatches, Walter frequently published foreign information days before the same intelligence was officially received by the government. He afterward frankly admitted that smuggling was the only means by which he could obtain French journals. Ultimately the *Times* took its place as the leading English journal, and Walter may be considered as its real creator. On 29 Nov. 1814 he issued his paper printed by König's steam cylinder press, the first paper to be printed by that method. (See PRINTING PRESSES). He acted as editor of the paper until after 1810, but from that time entrusted a share of the editorial work to Sir John Stoddart. In 1832–37 he sat in Parliament for Berkshire, but resigned in the latter year because of differences with his constituents; was returned for Nottingham in 1841, but was unseated in the following year. His later years were spent chiefly in retirement.

WALTER, John, English publisher: b. London, 8 Oct. 1818; d. 3 Nov. 1894; grandson of the founder of the *Times*. He was educated at Oxford, and was called to the bar 1847; was in Parliament as liberal conservative 1847–65 and 1868–85. His conduct of the *Times*—though successful on the whole—was not in all respects characterized by the wisdom and shrewdness which marked the régime of his father and grandfather. The *Times* was mulcted in substantial damages and had to pay enormous law costs for having become the dupe of a perjurer. The third John Walter erected a new office for the *Times*, and for himself a magnificent house in the suburbs of London.

WALTER, Thomas Ustick, American architect: b. Philadelphia, Pa., 4 Sept. 1804; d. there, 30 Oct. 1887. His early training was received in the office of William Strickland, and in 1830 he launched out for himself, building the Moyamensing Penitentiary in 1831. In 1847 he completed the Girard College building from his own designs, a building which has always been admired for the classic purity of its proportions. This classical *motif* he carried out also in his extension of the national Capitol at Washington, D. C., to which he added its noble dome. He erected many public buildings at Washington, including the Post Office and the Government Hospital for the Insane. He was one of the original members of the American Institute of Architects, professor of architecture in Franklin Institute, and lecturer on architecture in Columbia College.

WALTERBORO, S. C., town, county-seat of Colleton County, on the Charleston and Savannah Railroad (Plant System), about 50 miles west of Charleston. It is in an agricultural region, in which cotton is one of the chief products. It has cotton mills, a cotton oil mill, lumber mills, naval stores, lumber yards and large storehouses. There are two banks and one newspaper. Pop. 1,677.

WALTERS, wâl'tẽrz, **William Thompson,** American merchant and art collector: b. on the Juniata River, Pa., 23 May 1820; d. Baltimore, Md., 22 Nov. 1894. He was educated as a civil engineer, but became interested in the coal and iron industry, and while in charge of a smelting establishment in Pennsylvania produced the first iron manufactured from mineral coal in the United States. He removed to Baltimore in 1841, and established himself as a wine merchant there in 1847. He was president of the first steamship line between Baltimore and Savannah and was one of the reorganizers of the Southern lines. In 1861-65 he resided in Europe, where he traveled widely in the interest of art, and purchased numerous additions for his collection. He was United States commissioner at the Paris expositions of 1867 and 1878, and also to that at Vienna in 1873. His private collection was one of the largest and most valuable in the United States, and his annual exhibit of his gallery for charity netted $30,000 for the poor of Baltimore. He wrote 'Barye' (1885); 'Notes Upon Certain Masters of the 19th Century' (1886), etc.

WALTERS COLLECTION, began in 1820 by William Thompson Walters of Baltimore who had been art commissioner to the Paris expositions of 1867 and 1878 and to the Vienna Exposition of 1873 and who acquired a remarkable collection of French and Chinese art work, and Greek, Roman and Italian sculpture. The collection was augmented and suitably housed by his son in 1900. Consult Gruelle, R. B., 'Collection of W. T. Walters' (Boston 1895); and Bushnell, S. W., 'Oriental Ceramic Art Collections of W. T. Walters' (New York 1899).

WALTHALL, wôl'thąl, **Edward Carey,** American soldier: b. Richmond, Va., 4 April 1831; d. Washington, D. C., 21 April 1898. Admitted to the bar in 1852, he began practice in Coffeeville, Miss., and was district attorney for the 10th judicial district of Mississippi 1856-61. He then entered the Confederate army as lieutenant, becoming brigadier-general in December 1862 and major-general in June 1864. He especially distinguished himself at the battle of Missionary Ridge, where he led his brigade over a ridge and held back the Federal troops till the Confederate army made its escape; and he covered the retreat of General Hood's army after the defeat at Nashville. He practised law in Grenada, Miss., 1871-85, when he was appointed a United States senator to fill out the unexpired term of Lucius Q. C. Lamar. He was elected for full terms in 1888 and in 1892, was chairman of the committee on military affairs and served on the committees on the improvement of the Mississippi River and on public lands.

WALTHAM, wôl'thąm, Mass., city in Middlesex County, on the Charles River and on the Boston and Maine Railroad, 10 miles west of Boston. It is connected by electric railway with Boston, Newton, and surrounding towns.

Waltham was settled by farmers in the early days of the colony. The first incorporation was that of Watertown, which then embraced the territory now included in Waltham. In 1738 Waltham was set off from Watertown and incorporated as a town; and in 1884 it was granted a city charter. The chief manufacturing establishments are the two famous watch factories. At the American Waltham Watch Works, the first successful attempt was made to manufacture watch movements, on a large scale, by machinery. It is now the largest watch factory of its kind in the world. In 1814 a cotton mill was erected here, the first in the United States in which, under the same roof, the raw material was put through all necessary forms, even through the bleachery and the dye works, and came out the finished cotton cloth of the market. Other manufactories are saddlery and harness works, foundry and machine shops, wagon and carriage factories, emery wheel works, lumber mills, furniture factories and men's clothing factories. The value of the annual products is about $10,000,000.

The principal public buildings are the government building, the municipal buildings, banks, churches and schools. There is one large park and a number of small squares. The waterworks are owned and operated by the city. The main business streets and many of those in the residential sections are paved. The roads leading to the near-by villages and towns are well made and kept in good repair. The pure water, favorable climate and good sewerage make the place most healthful. There are 17 churches representing 10 different denominations. The educational institutions are the Massachusetts School for the Feeble-Minded, the Waltham Nurses' Training School, the Notre Dame Normal Training School, a public high school and two private schools doing high school work, Saint Mary's School (Roman Catholic) and Waltham New Church School (New Jerusalem Church). There are several commercial schools and Mellor's Commercial College, public and parish graded elementary schools, public evening schools, several private schools, a public library which contains about 40,000 volumes and several school libraries. There are two banks, one national and one state, and two daily newspapers. The government is administered under a charter of 1893 which provides for a mayor elected annually and a common council. The mayor appoints, subject to approval of the council, the majority of the administration officials, but the board of education is chosen by popular vote. Pop. 30,154. Consult Hurd, 'History of Middlesex County.'

WALTHAM ABBEY, or **WALTHAM-HOLY-CROSS,** England, a market town of Essex, 12 miles north by east of London, on the left bank of the Lea. It consists chiefly of one irregular main street, and has a spacious Norman church, which once formed the nave of the famous abbey church of the Holy Cross, where King Harold is buried. There are here government manufactures of gunpowder and percussion-caps, cordite and small-arms, besides breweries, flourmills, etc. The old abbey of Waltham was founded or enlarged by King Harold in 1060 and is said to have once possessed a fragment of the cross on which Christ suffered. In the neighborhood are the village of Waltham Cross, and an "Eleanor cross," recently restored. Pop. about 9,000.

WALTHER, Karl Ferdinand Wilhelm, Lutheran minister and author: b. Langenchursdorf, Saxony, 25 Oct. 1811; d. 7 May 1887. He was for a time pastor at Braunsdorf, Saxony. He emigrated to America with a large colony of his countrymen 1839, and settled in Perry County, Mo. He became pastor in Saint Louis 1841. He founded and edited *Der Lutheraner* and a German theological journal entitled *Lehre und Wehre.* He was a leader in the extreme Lutheran confessionalism, or strict adherence to the dogmatical standard, and was colloquially termed "the Lutheran pope." He organized in 1846 the Missouri Synod, which was the germ of the Synodical Conference. He was professor in the Lutheran Theological Seminary at Saint Louis from 1850 until his death. He was charged with holding Calvinistic principles, which he denied, and with which his doctrine of universal redemption would be quite inconsistent. He published a number of theological works in German; numerous sermons; and 'American Lutheran Pastoral Theology' (1872).

WALTHER VON DER VOGELWEIDE, väl'tĕr fŏn dĕr fō'gĕl-vi-dĕ, German lyric poet of the class of *Minnesingers:* b. about 1160; d. about 1227. He was descended from a noble but not wealthy family, whose castle, Vogelweide, is supposed to have been situated in Tyrol. Walther resided at the court of Frederick, the eldest son of Leopold VI, duke of Austria and on Frederick's death in 1198 left the court of Vienna and entered on a series of wanderings. He remained longest at the splendid court of the Landgrave of Thuringia, who had always around him a circle of poets and instituted that celebrated poetic contest, the war of the Warburg (1207), in which Walther took part. Walther shows himself, in his political poems, a warm partisan of the imperial interests against the Papacy. The Emperor

Frederick II was also a patron, and bestowed on him a small fief. His poems, all of which are lyric, have been published by Lachmann (1827). Consult Milmanns, 'Leben und Dichten Walthers von der Vogelweide' (1882); Schönbach, 'Walther von der Vogelweide, ein Dichterleben' (1895).

WALTON, wâl'tŏn, **Brian,** English Biblical scholar: b. Yorkshire, 1600; d. London, 29 Nov. 1661. He was graduated at Cambridge and from a curacy advanced through many preferments to a prebend in Saint Paul's. At the Restoration he was made chaplain to Charles II and bishop of Chester. His greatest work is 'Biblia Sacra Polyglotta' (6 vols. folio 1,657). This work comprises the Hebrew original of the Old Testament, the Samaritan Pentateuch, the Chaldee, Syriac, Arabic, Persian versions and the Latin Vulgate with various readings, notes, etc., still thought to be "the most complete Biblical apparatus in any language." He wrote in 1658 his 'Dissertation on the Antiquity and Authority of His Texts,' in later editions called the 'Prolegomena,' under which name it was published in the original Latin (1827–28). 'The Considerator Considered,' etc. (1659) was written in answer to Dr. John Owen's, 'Vindication of the Purity and Integrity of the Hebrew and Greek Texts,' etc., a criticism on Walton's great Biblical work.

WALTON, Frederick Parker, Canadian lawyer: b. Nottingham, England, 28 Nov. 1858. He was educated at Lincoln College, Oxford (1883), Edinburgh University (1886), and received honorary degrees from Aberdeen University (1906) and McGill University (1911). He was admitted to the bar (1886), was lecturer on Roman law at Glasgow University (1894–95), was legal secretary to the Lord Advocate (1895) and (1897–1912) was dean of the law faculty at McGill University. He was joint editor of the *Juridical Review* and (1912) was appointed legal adviser to the British administration in Egypt. He is author of several law works including 'The Workmen's Compensation Act, with Commentary' (1910).

WALTON, George, American patriot: b. Frederick County, Va., 1740; d. Augusta, Ga., 2 Feb. 1804. He was apprenticed to a carpenter, but studied law at night by the light of pine-knots, in 1774 was admitted to the bar, and began practice in Augusta. Together with three others he called a meeting at Savannah 27 July 1774 for the purpose of discussing measures of resistance against the arbitrary proceedings of Great Britain, and was one of a committee inviting co-operation from the sister colonies. Later he was one of the committee which prepared a petition to the king and in 1776 was sent as a delegate to the Continental Congress. He was one of the signers of the Declaration of Independence, and continued a delegate to Congress until 1781. He was appointed colonel of militia in 1778 and commanded a battalion under Howe when Savannah was captured by the British in September 1778, was seriously wounded, taken prisoner, and held until September 1779. He was chosen governor of Georgia in the following month, was chief justice of the State in 1783, 1787 and 1793; re-elected governor of Georgia in 1789, and in 1795–96 was United States senator.

WALTON, Izaak, English author: b. Stafford, 9 Aug. 1593; d. Winchester, 15 Dec. 1683. After receiving a school education in his native town he went to London and was apprenticed to an ironmonger. In 1618 he was made free of the Ironmongers' Company and seems to have retired with a competency in 1644. The statement frequently made that he was a sempster or haberdasher is unsupported by research. He early became closely acquainted with Dr. John Donne, Sir Henry Wotton and other famous men; and was a strong royalist and the friend of prominent royalists. Doubtless, after Marston Moor, he devoted himself much to fishing. Walton's fame rests on 'The Compleat Angler, or the Contemplative Man's Recreation: Being a Discourse of Fish and Fishing, Not Unworthy the Perusal of Most Anglers.' It was published in 1653, and went through five editions in his lifetime. The fifth edition, issued in 1676, contained, as a second part, Charles Cotton's treatise on fly-fishing, written to correspond with Walton's, and designated 'Instructions how to Angle for Trout or Grayling in a Clear Stream.' The chief subsequent editions are those by Moses Browne (1750), Sir John Hawkins (1760), Major (1824), Sir Nicholas Harris Nicolas (1836), Jesse and Bohn (1856), Marston (1888), Harting (1893), Lang (1896). There is a facsimile reprint of the first edition by Elliot Stock (1876), republished in 1877, 1880 and 1896. Lowell wrote the introduction for an American edition in 1889. Walton also wrote almost equally famous biographies of John Donne (1640), Sir Henry Wotton (1651, in 'Reliquiæ Wottonianæ'), Richard Hooker (1665), George Herbert (1670), and Robert Sanderson (1678). The first four were published together in 1670, and have been often reissued, as for instance, under the editorship of A. H. Bullen (1884) and Austin Dobson (1898). Besides the short pieces of poetry in his works, Walton wrote other occasional and prefatory verses, which are to be found in R. H. Shepherd's 'Waltoniana' (1878). The charm of 'The Compleat Angler' is due to its purity and simplicity of style, the ease and unaffected humor of the dialogue, and its exquisite pictures of natural scenery, combined with the picture that it presents us of the writer's own sunny and benevolent nature. One Richard Franck, a Commonwealth soldier, displayed his contempt of a royalist angler's practical acquirements in his 'Northern Memoir' (1694). Consult farther the lives by Zouch (prefixed to the 'Lives' in 1796; separately printed 1823); Nicolas (prefixed to the edition of the 'Compleat Angler' 1836), the basis of later works; Marston (1888); also Tweddell, 'Izaak Walton and the Earlier English Writers of Angling' (1854), and Blakey, 'Literature of Angling' (1856).

WALTON, N. Y., village in Delaware County, on the New York, Ontario and Western Railroad, about 175 miles northwest of New York, and 30 miles northeast of Binghamton. It is in an agricultural and dairy region, and the industries are connected with farm and dairy products. It has a foundry, machine shops, novelty works, and furniture factory. There are eight churches, a high school, graded elementary schools, and a school library. There

is one national bank capitalized for $50,000, and a newspaper. Pop. about 3,103.

WALTZ, Jean Jacques, French writer: b. Colmar, Alsace, 1873. He studied at the Beaux-Arts in Paris, became a contributor to the *Durchs-Elsass* and was made a chevalier of the Legion of Honor. For satirizing German character in his sketches he was ordered sent to prison for a year (1914) but escaped to France where he served in the army during the Great War. He has published the volumes, 'L'Histoire d'Alsace racontée aux petits enfants d'Alsace et de France' (1913), and 'Professeur Knatschké; œuvres choisies du grand savant allemand et de sa fille Elsa' (1915), and 'Mon Village,' his village sketches which attracted to him the attention of the German authorities and resulted in his conviction and sentence to imprisonment.

WALTZ, a dance executed by any number of couples, the gentleman having his arm around his partner's waist, the couple wheeling around on an axis of their own, and at the same time moving around the room. The music is written in triple time in crotchets or quavers. Compositions in waltz form are often not intended for dance tunes. The style of the waltz has varied much with the period and the country. See DANCING.

WALWORTH, wâl'wėrth, Ellen Hardin, American writer: b. Jacksonville, Ill., 20 Oct. 1832; d. 23 June 1915. She was married to M. T. Walworth (d. 1873) in 1852. She was one of the three founders of the National Society of the Daughters of the American Revolution in 1890: was director-general of the Women's National War Relief Association in 1898; and one of the first three women elected to the school board under the New York law. She was prominent in various club movements, and lectured and wrote extensively. Her writings include 'Battles of Saratoga' (1891); 'Parliamentary Rules' (1897), etc.

WALWORTH, Reuben Hyde, American jurist: b. Bozrah, Conn., 26 Oct. 1789; d. Saratoga, N. Y., 21 Nov. 1867. He was mainly self-taught, was admitted to the bar in 1809 and settled at Plattsburg, N. Y. He soon rose to eminence in his profession. He sat in Congress 1821–23, removing to Saratoga in the last-named year, was a circuit judge 1823–28 and chancellor of New York 1828–48. His decisions as circuit judge are included in 'Cowen's Reports' (9 vols., 1824–30); as chancellor, in 'Paige and Barbour's Reports,' 14 vols. (1830–49). He published 'Rules and Orders of the Court of Chancery' (1829); 'Genealogy of the Hyde Family' (1864).

WAMBAUGH, Eugene, American lawyer: b. Brookville, Ohio, 29 Feb. 1856. He was graduated at Harvard (1876) and was awarded his LL.D. (1880) and his LL.D. from the State University of Iowa (1892). After admission to the bar (1880) he practised at Cincinnati (1880–89), was professor of law at the State University of Iowa (1888–92) and since that time at the Harvard Law School. He was an editor of the *American Political Science Review* (1906–13) and (since 1915) assistant to the Judge-Advocate-General. He is author of 'The Study of Cases' (1892, 1894), 'Cases for Analysis' (1894), 'Cases on Agency' (1896), 'Cases on Insurance' (1902), 'Littleton's Tenures' (1903), 'Cases on Constitutional Law' (1915), 'Guide to Articles of War' (1917).

WAMPANOAG ("Eastern land"), a tribe of the Algonquian stock of North American Indians, closely related to the Massachusetts tribe, whose language they spoke. They were sometimes called Pokanokets, from their principal village, and Massasoits, from a prominent chief. The Wampanoags resided on Narragansett Bay, in Bristol County, R. I., and Bristol County, Mass., but originally they claimed the territory between Narragansett Bay and Pawtucket River and the Atlantic, including the islands of Nantucket and Martha's Vineyard. The Cape Cod branch of the tribe were visited by Gosnold in 1602, and by other whites at an early date. In 1617 many of their number perished from disease, prior to which time they claimed to have had 5,000 warriors, or about 18,000 souls. When the Plymouth Colony was planted in 1620 the Wampanoags inhabited 30 villages; Massasoit was their chief, and the treaty which he made with the colonists was faithfully observed by him until his death. He was succeeded by his son, popularly known as "King Philip," who, chafing under the ill-treatment which his people had suffered at the hands of the whites, aroused the resentment of all the Algonquian tribes from the Merrimac to the Thames (except the Wampanoags of Cape Cod and Martha's Vineyard), and in 1675 began a war against the whites which continued for two years and proved to be the most disastrous Indian conflict in New England history. The Indians were ultimately overcome, but not until Philip and other leading chiefs had been killed, and the Wampanoags and Narragansetts almost exterminated. Those who could, fled to the interior tribes, many captives were sold as slaves, and others joined the various "praying Indians" of southern Massachusetts.

WAMPUM, SEAWAN, PEAG or **SHELL MONEY,** a fabric bearing beads formed of the interior of shells, arranged in patterns or designs, formerly much used by North American Indians as a medium of exchange among the Indians of the Atlantic Seaboard States. Not merely did it serve the Indian as a medium of exchange and a standard of values, but worn as an ornament it was his badge of wealth and position, in the hands of the chiefs his record book and ledger, and through the favor of the Great Spirit its possession became in no small degree the passport to the happy hunting grounds of the future world. The use of wampum constituted a bond of union among the Indians such as was scarcely supplied by language, religion or racial customs. Wampum was made from shells, usually clam or oyster, and it was therefore not surprising that the coast dwellers were the most prolific producers of it. The black beads were made from the dark "eye" of the shell, the scar indicating the point of muscular attachment, while the white ones were taken from the outer parts. Black beads were known as sacki, white ones as wompi, and the black were usually considered twice as valuable as the white. Purple beads were also used. The fabrics were made up as belts, necklaces, bracelets and occasionally as

scabbards. The beads themselves were simply little shell cylinders about one-eighth of an inch in diameter and one-fourth of an inch in length. They were polished smooth by being rubbed against stones, and were bored by means of a flint awl, many of which are still to be found in the shell heaps along the New England Coast. The English colonists were compelled to use wampum as a medium of exchange with the Indians for more than half a century. Three dark or six white beads were swapped for an English penny. Rhode Island recognized it officially as late as 1670. In New York it was used until after the end of the century — as for instance in the payment of the ferriage between New York and Brooklyn. It was used in Southern Connecticut as late as 1704, and in the backwoods regions of the northern and middle colonies well down into the 18th century.

WANAMAKER, wŏn'ą-mā-kẽr, **John**, American merchant: b. Philadelphia, 11 July 1838. He received a common school education, and began his business career at 14 as errand boy in a store. In 1861 he established, with his brother-in-law, a clothing store under the firm name of Wanamaker and Brown, which in 1869 became the firm of John Wanamaker and Company. He soon became the foremost merchant of Philadelphia. His success is attributable to his early comprehension of advertising, and of the principle of the department store. He was the first in Philadelphia to expend large sums in the newspapers, and to hire high-priced men to write and systematize advertising. After building up an enormous establishment in Philadelphia, he observed the decadence of the A. T. Stewart business in New York, and in 1896 purchased the building, and proceeded to revive the trade of his distinguished predecessor. In a short time the historic Stewart block on Broadway, from Ninth street to 10th street, proved too small, and in 1903 he erected a "Skyscraper" annex on the block south. Mr. Wanamaker has been active in the public life of Philadelphia, and took a prominent part in the movement to secure pure water for the city, in 1886-87, and in other reform movements, and has taken part in State and national politics as an "anti-machine" Republican. In 1888 he was a presidential elector, and in 1889 entered President Harrison's Cabinet as Postmaster-General. During his term of office he established the sea post offices, and strongly favored a postal telegraph system. He has taken an active part in religious work, was for several years president of the Philadelphia Young Men's Christian Association, and in 1858 organized a small Sunday school which became the Bethany (Presbyterian) Sunday school, one of the largest in the United States.

WANAPUM INDIANS ("river people"), a tribe of the Shahaptian stock of North American Indians — the Sokulks of Lewis and Clark. They range along both banks of the Columbia in Washington from above Crab Creek down to the mouth of Snake River. Having never made a treaty or gone on a reservation, they are not yet officially recognized by the government. They number about 200.

WAND OF MERCURY. See DIVINING ROD.

WANDERING CELLS, or PHAGOCYTES. See PHAGOCYTOSIS.

WANDERING JEW, a traditional personage. See JEW, THE WANDERING.

WANDERING JEW, The, was one of the most popular of the long series of widely and eagerly read novels that gave Eugene Sue a foremost place among the novelists of the middle period of the 19th century in France. It remains, with the "Mysteries of Paris" the only one that still continues to find readers. It appeared as a serial in the newspaper *Le Constitutionnel* (1844-45), and created something of a sensation, provoking by the abundance of controversial matter it contained a great deal of discussion, both bitter attack and ardent defense. It returned to those lower regions of Paris life and to those pictures of wretchedness and crime for which not long before the public curiosity had been excited by the "Mysteries of Paris," and exploited the then prevalent interest in social reforms, in the amelioration of the condition of labor and the elevation of the proletariat. It was thus a vehicle for the dissemination of the generous theories and dreams of Fourier, Leroux and others. It exhibits with realistic detail the intolerable lot of the working classes, especially of the women, and elaborates a program of profit-sharing, of community living, and of other industrial improvements. It also attacks the abuses to which certain institutions were liable, such as private asylums for the insane, convents, etc. In these respects Sue was a forerunner of Hugo and Dickens. But these elements are submerged in a rushing torrent of melodramatic blood and thunder. A multitude of actors struggle in a world-wide web of intrigue relentlessly spun around them by the subtle cunning of the arch villain, Rodin. The means for his iniquities Sue represents as furnished by the vast, secret and perfectly disciplined organization of the Jesuits, of whose society he is a devoted but not unselfish member. So the book added to its other interests that of a violent attack on the Jesuits, at that time the objects of much suspicion and of drastic repressive measures in France, Switzerland and elsewhere. The legendary figure that gives the novel its title plays but an occasional and unimportant rôle in the story, intervening once or twice in the action, but for the rest serving only as a vague symbol of the restless striving that is the lot of poor humanity. If the book is still read, in spite of so much in its matter that no longer interests us to-day, and also in spite of its inordinate length of more than 1,200 closely printed pages, it is because the story is told with real art and the pictures are drawn with vividness and color. It is accessible in English translation.

ARTHUR G. CANFIELD.

WANDERING JEW, a name applied to various plants — in Great Britain to the beefsteak or strawberry geranium (*Saxifraga sarmentosa*) and to the Kenilworth ivy (*Linaria cymbalaria*). *Zebrina pendula,* a leafy rapidly growing plant, with lance-ovate leaves glossy and bright green or purplish above with broad silvery stripes, is also known as the wandering jew; it will grow either in sun or shade, or in

water alone. Another wandering jew is a spiderwort (q.v.).

WANDERLEY, João Mauricio, BARON COTEGIPE, Brazilian statesman: b. Barro do São Francisco, Pernambuco, Brazil, 23 Oct. 1813; d. Rio de Janeiro, Brazil, 13 Feb. 1889. He studied law and soon entered politics, joining the Conservative party, and from 1842 was repeatedly elected deputy. In 1856 he became senator, holding the office until his death and acting as president of the body in 1882 and 1885. He was created a baron in 1868, was Minister to the Platine republics in 1870, and concluded the treaty of peace with Paraguay. He was a Cabinet officer in nearly all the Conservative cabinets and in 1885 organized the ministry which secured the general emancipation law.

WANDEROO, or WANDERU, a large monkey (*Macacus silenus*) of southern India, especially the country bordering the Malabar Coast. The wanderoos have long, slim bodies, covered with black hair, and tufted tails. The head looks very large, because of a mane, or ruff, and beard, which sticks out around the face, and is either gray or white, enhancing the sly look of the broad face, dull eyes and broad muzzle.

The name is also given generally to monkeys of the genus *Semnopithecus*. *S. ursinus* is the great wanderoo of Ceylon, and Eastern zoologists often restrict the name to this species alone. They live in small classes or groups of a few dozen individuals, are very intelligent, and make more agreeable pets in captivity than most monkeys. The gray beard and solemn mien gives them a venerable appearance sharply contrasting with related species.

WANDSWORTH, wândz'wĕrth, London, England, a metropolitan and parliamentary borough on the south side of the Thames. Area, 9,107 acres (the largest of the London boroughs). It includes the districts of Putney, Clapham and Streatham. Wandsworth proper is situated close to the Thames, near the mouth of its small tributary, the Wandle, and is built between and on the slopes of two hills. New Wandsworth, a suburb of recent growth, lies to the east and south of both stretches of Wandsworth Common, beside which are the Surrey County prison, the county lunatic asylum, etc. It was the site of a French Huguenot settlement after the revocation of the Edict of Nantes, when important industries were introduced. Paper making, brewing, hat making and dyeworks are among the manufactures. Pop. about 311,360. Consult Arnold, 'History of Streatham' (1886); Grover, 'Old Clapham' (1887); Coward, 'Wandsworth and Putney'; with a 'Chapter on Pre-Historic Age' by G. F. Lawrence (1893); Hammond, 'Bygone Wandsworth' (1896), and 'Bygone Putney' (1898); Jackson, 'Putney: Past and Present' (1883); Mitton and Geikie, 'Putney, Hammersmith and Fulham' in 'Fascination of London' Series (1903); Morden, 'History of Tooting Graveney' (1897); Rudolf, 'Clapham before 1700 A.D.' (1904).

WANG SHIH-FU, Chinese dramatic poet. He lived in the 13th century, was the creator of the Chinese opera 'Thsa-Khi, and composed 13 plays, of which only two survive. The 'Hsi Hsiang Chi,' or 'Story of the Western Pavilion'—like all Chinese plays, a sort of novel in dialogue—is his best work and obtained and still holds great popularity with the Chinese. It has been called by Giles "of all plays of the Mongol dynasty, the one which will best repay reading." The other is the comedy 'The State Minister's Feast.' The former was partly translated into French by Stanislas Julien, the eminent French sinologue, in 'Europe Littéraire.'

WANG YANG-MING (A.D. 1472–1529) in Japanese, Oyomei (q.v.), a Chinese philosopher, who has probably influenced the mind of modern China, though largely through Japan, in the direction of action and reform, more than any other teacher since Confucius, Mencius, or the mediæval reconstructor of the ancient thought, Chu Hi (q.v.). In Japan this Oyomei philosophy formed the mental food and furnished the motive to the reformers who since 1868 have modernized their country. Largely through the thought of Wang, thus embodied and reformulated by Japan, China has received the new mind that enables her to harmonize modern and Occidental ideas with her age-old orthodoxy. In the history of Chinese thought we recognize Confucius as the transmitter of ancient tradition, who handed down in good literary form the ethics, ritual and world of thought in which the Chinese patriarchs lived, showing man in harmony with the universe and its laws. To this Confucian system Mencius (q.v.) gave fresh exposition and popularity, especially in its application to government. Then followed centuries of commentary. Meanwhile the rivals of Confucianism were Taoism (q.v.) and Buddhism—one the more speculative native and the other the more metaphysical Hindoo faith—gained adherents, the former with the scholars and the latter with the masses, in whose minds the three systems blended. It may be truly said that China extended her empire more through the propaganda of culture than by the sword. In the 12th century there was an outburst of populism, with a challenge of old ideas, compelling to deeper thought. The Chinese thinkers led by Chu Hi (q.v.) (1130–1200) recast and made restatement of the national faith, virtually blending Hindoo and Mongol ideas. Through his commentary on the classics, Chu Hi gave an interpretation, by which Confucianism took the form of a creed, which became the virtual religion of most gentlemen in all the lands of eastern Asia, and which became the official orthodoxy, approved by governments, to doubt or impugn which might, in varying means of displeasure, mean ban, persecution, imprisonment or death. Chu Hi was a realist, believing that things exist in their own right, apart from the mind. Against this system Wang Yang-ming, an idealist of the monist type, protested. From this point of view nothing exists apart from the mind. To know was to be. Knowledge and action, in the superior man, were one. Finding fault with the commentators later than Confucius, including Chu Hi, whom he accused of adulterating with Buddhist notions the ancient purity of Confucianism, Wang called for a return to the ancient classics. He thus brought the primitive system, as taught

by the master, into its true domain of practical ethics. This achievement of Wang in the realm of thought ranks him, relatively, and results, with the great European masters, Augustine, Luther, Calvin and Kant; for his teachings have revolutionized the thinking of a fourth of a human race. Yet so far from being a man of books and study only, Wang was a statesman and successful general, whose victorious campaigns over the rebels in southern China fill a brilliant page in the history of the empire, under the Ming dynasty (1368–1644). Descended from a long line of military heroes and scholars, Wang saw the light on the 30th day of the ninth month A.D. 1472. The usual portents attending the birth of a great man are related by his biographers. Unable to speak until five years of age, he astonished his grandfather by then repeating the contents of his books, saying, "I remember what I heard you read." With his father, he visited the capital and surprised the elders with his poetic ability. Besides training in horsemanship, archery and the military art, he became an adept in the system of the Taoists and Buddhists, being made at 28 a member of the Hanlin or Imperial Academy. After appointment to higher offices and further study of Taoist and Yoga doctrines, he built a home near the Yang-ming grotto, resigned office and lectured to the students who flocked to his chair. Made inspector of the army, he shielded faithful officers, but thereby fell into disfavor with a powerful eunuch at court. He was exiled and lived for some time in the mountains as Kweichow, here receiving the great enlightenment—the duty and delight of "investigating things for the purpose of extending knowledge"—and wrote a commentary on the Five Classics. Restored to honors, rank and office, he put down the rebels in southern China, thereby greatly extending and consolidating the empire. During his prolonged activities in the field, he never ceased his meditations or discourse on the great problems of being, life, duty and the ideals of conduct. Yet despite his military success and civic honors, his jealous enemies charged him with heterodoxy, and the heresy-hunters poisoned even the mind of the emperor against him. In time, however, imperial favor returned. He was made viceory and loaded with fresh honors, his disciples multiplied and the voices of slander were hushed. After the last of his victories he established a college for the subdued people. Worn out with his manifold labors, he visited his ancestral temple, ordered his coffin made, and in full possession of his faculties, with parting words to his disciples, closed his eyes in death, at the age of 57. His body was reverently washed and arrayed for burial by his disciples and "the noise of weeping shook the earth." He was buried at Hungchi, a few miles from Hangchow (q.v.). Posthumous memorials, in defense of Wang's orthodoxy and in praise of his virtues, were sent to the emperor. Thousands of his followers came to his tomb to mourn. Posthumous honors were awarded by imperial edict in 1567 and again in 1583, when the emperor commanded sacrifice to be made to the Teacher (Wang) in the Confucian Temple, after sacrificing to Confucius. Beyond this, higher honors to a subject could not be paid. Wang's effigy is still preserved in many temples in China. In Japan his philosophy received relatively wider acceptance and thus mediately, through Japan, the Chinese intellect was refertilized in our own day to the renovation of his own country. Consult 'The Philosophy of Wang Yang-ming' (translated by Prof. F. G. Henke, Chicago 1916).

WANTAGE, wŏn'tāj, England, a market-town in Berkshire, in the fertile vale of the White Horse, 13 miles southwest of Oxford. There are an interesting old church, a town-hall, corn exchange, grammar school and cottage hospital. Iron and brass founding and the manufacture of bagging and jute goods are carried on. King Alfred, to whom there is a statue by Count Gleichen, erected in 1877, was born at Wantage, as was also Bishop Butler. Pop. 3,628.

WANX RIVER. See CAPE RIVER.

WAPAKONETA, wā"pą-kŏn-ĕt'ą, Ohio village, county-seat of Auglaize County, on the Auglaize River and on the Cincinnati, Hamilton and Dayton Railroad, about 30 miles north of Piqua and 13 miles south by west of Lima. It is in an agricultural region and in the natural gas and petroleum belt. The place was visited by whites in the early part of the 19th century and some settlements made. It was laid out as a village in 1833. Where the village now stands was the site of an Indian village of importance, the meeting place of certain tribes. In 1831 it was the scene of the signing of the treaty whereby the Shawnees and Senecas relinquished their lands to the government. Wapakoneta was the last place in Ohio occupied by the Indians. The chief manufactories are furniture, wagons, carriages and carriage wheels, machinery, refrigerators, woodworking machinery, etc. There are three banks, two national and one private, and one daily and two weekly newspapers. Pop. 6,000.

WAPELLO, wą-pĕl'ō, Iowa, town, county-seat of Louisa County, on the Iowa River and on the Burlington, Cedar Rapids and Northern Railroad, about 25 miles north of Burlington and 20 miles south of Muscatine. It is in a rich agricultural region in which the principal products are wheat, corn, vegetables and fruit. Considerable attention is given to stock-raising. The manufacturing establishments are flour and lumber mills, fruit and vegetable canneries, agricultural implement shops and creameries. The town makes large shipments of grain, canned goods, hay and livestock. There are two banks, one State and one private, and two newspapers. Pop. 1,532.

WAPENTAKE, or **WAPENTAC,** in England, an ancient county among some of the northern shires, still retained in Yorkshire. It corresponds to the "hundred" of the southern counties. The word means "weapon-touching" and refers to the custom of the chiefs of a particular district meeting at a certain day at a specified spot, when the head chief, alighting from his horse, raised his spear in the air, and the inferior chiefs, also on foot, touched this spear with their lances, and so acknowledged their fealty.

WAPINSCHAW, or **WAPENSHAW,** (A. S. *wæpen,* a weapon; *sceawian,* to view, to look at—lit., a *weapon-show*), a review of persons under arms, formerly made at certain

times in every district of Scotland. The name is now familiarly applied to a gathering of the volunteer corps of a district for purposes of inspection, for shooting, etc. The Wapinschaw, or periodical gathering of the people for the purpose of exhibiting their arms, was ordained by various Scots statutes of the 15th and 16th centuries, which directed each individual to be armed on a scale proportioned to his property. In the time of war or rebellion, proclamations were issued charging all sheriffs and magistrates of burghs to direct the attendants of the respective wapinschawings to join the king's host. During the reign of the later Stuarts, attendance on the wapinschaws was enforced with considerable strictness; and in addition to military exercises, sports and pastimes were carried on by authority at these gatherings. The Covenanters, disapproving of the sports at these gatherings, did what they could to discourage attendance.

WAPITI, an Indian name of the great North American deer (*Cervus canadensis*), known in the West as "elk," but more like the red deer than the European or true elk (q.v.). It formerly ranged from the mountains of the Carolinas to lat. 56° to 57° N., but is now nearly extinct, except in the northern Rocky Mountains. It is closely allied to but considerably larger than the stag, standing about 64 inches at the shoulder; yellowish brown on upper parts; sides gray, long coarse hair in front of neck, like a dewlap; antlers large, often exceeding four or even five feet in length; browtine duplicated. In the Northwest it is represented by several related species, but the Eastern wapiti seems doomed to extinction, except as bred in captivity. During the winter these noble animals gather in large herds and feed on the open hills. The antlers are shed about March and the new ones are complete by September. The bucks fight fiercely and not infrequently with fatal results at the pairing season; and the stronger ones are polygamous, gathering into their herds every available cow and guarding them and the young with jealous care. They eat almost everything of a vegetable nature, leaves and twigs as well as grass and herbs. During the summer, when they are much troubled by mosquitoes and flies, they are fond of entering the water and of wallowing in mud holes. See DEER.

WAPPÆUS, vä-pā'oos, **Johann Eduard,** German geographer: b. Hamburg, 17 May 1812; d. Göttingen, 16 Dec. 1879. He was educated at the universities of Göttingen and Berlin, and in 1833-34 traveled in Brazil and the Cape Verde Islands. He became a tutor at Göttingen in 1838, was appointed adjunct professor there in 1845, and from 1854 until his death was full professor in that university. His most widely known work is his edition of the Stein-Hörschelmann 'Handbuch der Geographie und Statistik' (1871), of which he wrote the volumes on 'Universal Geography' (1849); 'North America' (1855); 'Central and South America' (1867); and 'Brazil' (1871). His other writings include 'Untersuchungen über die geographischen Entdeckungen der Portugiesen unter Heinrich dem Seefahrer' (1842); 'Deutsche Auswanderung und Kolonisation' (1846); 'Allgemeine Bevölkerungsstatistik' (1859-61), etc.

WAPPATOO, an aboriginal name of the root of the common arrowhead (*Sagittaria latifolia*) which was a favorite food of the North American Indians.

WAPPERS, väp-ār, **Gustav,** BARON, Belgian painter: b. Antwerp, 23 Aug. 1803; d. Paris, 6 Dec. 1874. Educated at the Art Academy of his native city under Van Bree and Herreyns, he went to Paris and devoted himself to copying the masterpieces of the Venetian School and subsequently studied the style of Rubens, Jordaens and the Flemish painters. He made his first great hit in 1830 by a large picture representing the 'Burgomaster Van der Werf of Leyden in the Spanish Siege.' Wappers surrounded himself with a number of young painters and under the enthusiasm he kindled a new school of Belgian painting came into existence. In 1832 he was appointed professor and eight years later director of the Art Academy of Antwerp; from 1846 to 1853 he was president of the Belgium National Museum and in 1847 was ennobled. Among his principal pictures are 'The People of Brussels Tearing up the Proclamation of Prince Frederick' (1835, in the Museum at Brussels); 'The Entomologist' (1836, formerly in Saint Michael's Church, Louvain); 'The Madonna in Clouds Surrounded by Angels'; 'Charles IX Shooting Down the Huguenots'; 'Anne Boleyn Taking Leave of Elizabeth'; 'Boccaccio Reading His Decameron to Johanna of Aragon'; 'The Capture of Rhodes by the Turks,' etc.

WAPPINGER ("the east"), a confederacy of the Algonquian stock of North American Indians formerly occupying the territory extending eastward from the Hudson River, between the neighborhood of Poughkeepsie and Manhattan Island in New York to the valley of the Connecticut River in Connecticut. They were closely related to the Mohicans, and by most authorities are regarded as having been a part of them. The component tribes of the Wappinger confederacy were: (1) the Wappinger, which formed the principal tribe and which occupied Dutchess County, N. Y., about Poughkeepsie and Wappinger Kill; (2) the Recgawawancs; (3) Wecquaesgeeks; (4) Sintsinks; (5) Kitchawanks; (6) Tankitekes; (7) Nochpeems; (8) Siwanoys; (9) Sequins or Mattabesecs. As Connecticut became colonized by the whites, the eastern tribes of the confederacy gradually sold their lands and almost dwindled away, the survivors finally joining the Indians at Scaticook, Conn., and Stockbridge, Mass., while a few went to Canada. The Hudson River tribes became involved in war with the Dutch colonists in 1640, which continued for five years, the Indians losing 1,600 of their number and the Wappingers being the chief sufferers. The survivors retained their tribal customs until 1756, and continued to occupy a tract in Westchester County, when most of them joined the Nanticokes, then living under Iroquois protection at Chenango, near Binghamton, N. Y., and finally became merged with the Delawares. Some of them also joined the Moravian and Stockbridge Indians, while a few still resided in Dutchess County just before the American Revolution.

WAPPINGERS (wŏp'ĭn-jĕrz) **FALLS,** N. Y., village, Dutchess County, on Wappinger Creek, about two and one-half miles from its

mouth at New Hamburg and seven miles south of Poughkeepsie. It is connected with Poughkeepsie by an electric line, and has the advantage of the steamer traffic on the Hudson. The river port used by the village is New Hamburg. The name of the village is that of a tribe of Indians who once inhabited this section. The creek here falls over a series of high ledges which form picturesque cascades, and also furnish water power for several manufactories. The chief industrial establishments are print-works, established in 1834; overall and sheeting factory, machine shop, grist mill and creameries. The village has a union school, public and parish elementary schools and a school library. There is one bank and a newspaper. Pop. 3,742.

WAR. The last resort for the settlement of disputes is the appeal to physical force, whereby the weaker is either compelled to yield to the demands of the stronger, put to flight, or, in the last extremity, slain. War is resorted to either for advantage or for vengeance. The one party possesses something which the other has resolved to seize, or has inflicted some real or supposed injury on the other, which he determines to punish by the infliction of a corresponding chastisement. War and law are quite opposed to each other, but while opposed they are also related. The ultimate means of enforcing law is by physical force, but in every society the aim of law is to put down every appeal to force except on the part of the magistrate, and equally to restrict his use of it to the enforcement of the law. Where there is no organized society, every individual family, or group, enforces its own claims and appeals to force are consequently frequent, but as society extends its organization these partial appeals to force are declared illegal and put down. But the society, however extended, is still partial; outside of it exist other societies with independent laws and different interests. Between these, disputes are liable to arise, which, failing mutual accommodation, can only be settled by force. In each society, moreover, the central authority is liable to vicissitudes of strength. When it is active and vigorous, the whole society is kept in equilibrium and repose; when it is weak or idle, private or party interests assert themselves, the laws are disobeyed and the central authority may be defied and overthrown. Thus, three conditions of warfare arise according to the degree of organization of society: the state of private war, when no great central authority has been established, or when it has been wholly destroyed; the state of civil war, when such an authority, having been established, has decayed, and the society arranges itself in different parties for the purpose of maintaining the old or establishing a new central authority; and the state of international war, when states sufficiently powerful to control their own subjects quarrel among themselves. In each of these states war is conterminous with and opposed to law.

The aim of law is always to control war, and either suppress it or render it subservient to its own enforcement or re-establishment; the aim of war is either to supplement the impotence of law or accomplish some object forbidden by it. Hence the peculiarity of all laws relating to war. They are fluctuating in their nature, because the power to enforce them is frequently wanting; yet they are necessary and in the end efficacious, because force can be applied in favor of law as well as against it, and it commonly becomes the interest of society in the long run so to apply it. It follows also from these conditions that as there are three states of warfare, so there are three relative states of law opposed to them: international law is opposed to international war, national law to civil war, and natural law to private war. In each case law forms the boundary of war and war of law, so that where one is strong the other is weak. International law may thus be defined as consisting of those common principles which still continue to be recognized and observed by belligerents. The persistent disregard of any principle of law by a belligerent would annihilate it as a principle of international law, and as the belligerent has already set the power of its immediate antagonist at defiance, the only considerations which can enforce its observance of an international law are its own respect for its principle, or its fear of the power of neutrals. In like manner national law is opposed to and limits civil war. In as far as either party sets the national law at defiance the law is abrogated and can only be re-established by force; in as far as it is observed it controls the action of both parties. Private war is opposed by natural law because there is no positive law recognized by the parties. Violence is limited only by the power of conscience of the belligerents.

During the Great War of 1914–18 practically the entire industries of the nations involved were diverted from the usual channels to the one great task of keeping the armies in the field supplied. Great science and skill are applied to the conduct of military operations and the principles on which they ought to be conducted are carefully investigated in the light of experience. In the progress of society certain usages of war have come to be generally recognized. These have varied greatly at different times and in different countries, but the changes in them have been in general favorable to the interests of humanity. The Hague tribunal has done much to codify these rules of warfare and to make their acceptance more general. Prisoners of war are no longer put to death, nor are they reduced to slavery, as was frequent in ancient times; and their treatment has become increasingly mild and kind. Quarter is now generally granted in battle whenever it is sought, although in the late war it was at times found almost impossible to grant it due to the necessity of detailing men to conduct prisoners to the rear, thus depleting the forces for attack. A state of war is ended by armistice, treaty or conquest, although it is more true to say that hostilities are brought to an end by an armistice while a state of war continues until a treaty of peace is concluded, signed and ratified by the belligerents. See CONTRABAND; INTERNATIONAL LAW; PRISONERS OF WAR; PRIZE; PRIZE COURTS AND PRIZE JURISDICTION; STRATEGY; TACTICS; TREATY; WAR INSTRUMENTALITIES; WAR INDEMNITY; WAR WOUNDS; WAR ZONES. And consult Bordwell, Percy, 'Law of War between Belligerents' (Chicago 1908); Holland, T. E., 'Laws of War on Land' (Oxford 1908);

Higgins, A. P., 'War and the Private Citizen: Studies in International Law' (London 1912); Beaty and Morgan, 'War: Its Conduct and Legal Results' (ib. 1915); Brewer, D. C., 'Rights and Duties of Neutrals' (New York 1916); 'Instructions for the Government of Armies of the United States in the Field' (Washington 1863) and 'The Laws and Usages of War at Sea' (ib. 1900); Spaight, J. M., 'War Rights on Land' (London 1911); Wehberg, H., 'Capture in War on Land and Sea' (London 1911).

WAR, Censorship of the. One of the many paradoxes of the Great War fought for freedom and democracy against autocracy and irresponsible authority was, that the democratic champions were themselves compelled, for the purposes of their war of liberation, to adopt many of the methods and principles against which they fought. In all the belligerent countries, in democratic America as in autocratic Germany, there was built up a vast bureaucratic machinery, a veritable college of propaganda, having for object the shaping of political opinion by the centralized government. This result was achieved mainly by manipulating the dissemination of information; autocratic and generally secret bodies deciding that the knowledge of such and such facts should be withheld from the public, such and such other facts emphasized and perhaps especially prepared for their consumption. In this way governments were in a position to determine the opinion of their citizens through control of the knowledge on which such opinion was based. This was the method, in all its purity, pursued by Prussia for so long, the very cornerstone of the system which gave the conscience of her people into the keeping of her government, and made possible certain moral results which appalled the world.

The official justification of a censorship as it affected both the individual and the press of the Entente countries was that its object must be realized if the war was to be won. This object was threefold: To prevent information of military value from reaching the enemy; to acquire similar information for the home government; and to check the dissemination of information useful to the enemy or prejudicial to the home government. In the course of the war it became apparent that in the censorship there lay ready to hand a weapon, the full value of which was perhaps not anticipated prior to the war. It was used to restrict commercial and financial transactions intended for the benefit of enemy governments or persons residing in enemy countries.

As might be anticipated the censorship regulations of the several belligerents differed somewhat. In Germany, due to the predominance of the military caste, the press afforded no problem, nor indeed in France. On the pretext of preventing the leakage of military information, Germany established a censorship which was constantly employed for the suppression of opinion and the stifling of political criticism. Foreign correspondents, in the early years of the war at least, were permitted to visit the advanced German lines, but their dispatches were subjected to the stringent regulations of the military authorities, and persons so visiting the fronts were not permitted to leave Germany before a period of six weeks had elapsed. One of the results of the German censorship was the dissemination within Germany of a considerable body of clandestine literature, most of which originated among German revolutionists in neutral Switzerland. In occupied Belgium, where the German censorship was more rigorous than even in Germany itself, Belgian journals were smuggled in and important passages were copied and circulated by underground routes. The most interesting and defiant of these secret journals was *La Libre Belgique*, which the German authorities were unable to suppress despite the utmost vigilance.

France issued no licenses to correspondents, and for a long time England permitted but 12 American correspondents to remain in London! Newspaper men found soon after the outbreak of war that the day of glory for correspondents had passed. Belgium was the only country that made any exceptions in this matter, but the part of Belgian territory that remained unoccupied by the enemy was so small that this action afforded comparatively little relief.

With countries like England and the United States having numerous routes of trade and communication always open, the task of the censor was not as simple as in France and Germany; yet England moved 100,000 men to the Continent without any news of it reaching the public. To the press itself belongs the credit for this silence. The government was then unprepared for the exercise of censorship and the press itself was the governing factor in the matter. Later the British censorship was developed to a high state of efficiency and rendered excellent service despite many tactical blunders. In this connection, it may be noted that news of the heroic stand of Britain's troops at the first battle of Ypres was not permitted to reach the public for four months after the event, and then its appearance was due to the patriotism of Lord Northcliffe who was willing to incur the displeasure of Kitchener and the War Office that England might learn of the heroic conduct of her sons.

American military censorship in France and other countries in which American troops operated was exercised by a department of the army's secret service and the little manual entitled 'Field Service Regulations,' defined the rights and limitations of war correspondents as guaranteed and decreed by the War Department. The American system worked great hardships on the correspondents; the personnel of the military censorship bureaus often comported themselves in a vindictive manner toward certain correspondents who had ventured a protest against the methods of the censor. At home, the Committee on Public Information, headed by George Creel, was in effect a board of censors without a censorship, since its control of the press through its control of the news sources was as complete as that of any censor in any of the warring nations. The American press, however, imposed upon itself a voluntary censorship in agreeing to the suppression of all matter which might be of aid to the enemy. The committee above named was designated to advise with publishers and writers in the administration of this voluntary censorship.

WAR, Civil. See UNITED STATES — CAUSES OF THE CIVIL WAR, MILITARY EVENTS OF THE CIVIL WAR, POLITICAL EVENTS OF THE CIVIL WAR, ETC.

WAR, EUROPEAN, the great conflict, brought to an end in 1918, changed not only the boundaries of nations, but practically every interest and character of human life. It created a gigantic upheaval among the hitherto accepted fundamental principles underlying government, law, international relations, democracy, freedom, commerce, industry, finance, labor, etc. Over a score of thrones crumbled and their former occupants sought security in exile. Revaluations and restatements have become necessary in all fields of endeavor. The conflagration in 1918 involved 93 per cent of the world's population, the countries classed as neutral had a combined population of only 130,000,000 whereas the countries which participated in the war had a combined population of over 1,700,000,000.

The war also brought to the front the eminent men of all nations; many of them new to fame, but whose names have now become household words. The biographies of these will be found under their respective names. The campaigns and battles brought into prominence nationalities, provinces, rivers, cities and towns previously little known. Descriptions are found in their proper places throughout the work.

In this section there is presented a complete general statement written by competent scholars and authorities on the causes, course, and determination of the war, showing every phase of the political, military, naval, economic and administrative aspects — a scientifically developed and connected history of events, together with a number of articles showing how the war has effected modern life The subject divisions of this department are as follows:

1. Historical Introduction
2. Diplomatic History
3. Chronological Survey of the War
4. Fighting Strength of the Nations
5. Military Operations on the Western Front
6. The Eastern Front
7. Italian Campaign
8. Colonial and Japanese Campaigns
9. Turkish Campaign
10. Balkan Campaign
11. Naval Operations
12. Aerial Operations
13. The Armistices
14. Events Subsequent to the Armistices
15. Diplomatic Negotiations during the War
16. General Pershing's Report
17. The Peace Conference
18. The Peace Treaties
19. American Neutrality
20. Neutrals and the War
21. The War and the Small Nations
22. Post-War Problems and the Balkans
23. Costs of the War
24. War Casualties
25. Repatriation of Prisoners
26. Psychology of the War
27. The War and Its Relation to World Commerce
28. Effect of the War on Currency

See also FINANCIAL PROBLEMS AND THE WORLD WAR; FOOD PROBLEMS AND THE WAR; INSURANCE, INDUSTRIAL; MEDICAL SCIENCE AND THE WORLD WAR; NATIONAL IDEALS AND THE WAR; SUBMARINE WARFARE; WAR, INSTRUMENTALITIES AND METHODS OF; WAR PENSIONS; WAR RISK INSURANCE; WAR WOUNDS; WAR ZONES; articles on the countries engaged, the rulers, presidents, premiers, etc., of these countries.

1. HISTORICAL INTRODUCTION.

Wars are invariably concerned with issues of great magnitude, although they frequently arise from unimportant circumstances. This is especially true of the European War which broke out in 1914. It would be rash, however, to describe any — or even all — of the political events of the past as "causes" of the war: they were incidental circumstances contributing to an accumulation which rendered war extremely probable. The direct cause of the war was the German ultimatum to Russia on 1 Aug. 1914; it was that which converted a local quarrel between a first-rate and a fifth-rate power into a world-wide conflict. The critical situation was created by the murder of the Archduke Franz Ferdinand of Austria and his wife at Serajevo on 28 June 1914. Turning from direct to oblique causes, it will be found that these had been smoldering beneath the visible surface for many years and only needed a slight breath to produce a gigantic conflagration. History that is still in the making or is not yet crystallized gives rise to a confused mass of controversy and contradiction; each participant "hath his quarrel just," and the student of current events is largely cast upon his own resources and inclinations to form a judgment from the conflicting material at his disposal. Certain outstanding features of the past may, however, serve as a guide to read the riddle of the times in which we live.

Perhaps the most prominent of these features is the marvelous rise of modern Germany since its unification in 1871. The excellence of the educational system of the German people, their technical training, scientific research and machine-like precision had all contributed to make them the most formidable competitors to the older and more slowly-moving nations of Europe. Economy in production and skilful labor enabled them to flood the markets of the world with their wares; in the chemical industry they were almost supreme; in shipbuilding and machine construction they rivaled Great Britain; their financial standing was of the highest; German capital stood behind the greatest enterprises, and magnificent German ocean steamships ploughed the Seven Seas. In short, Germany was in a fair way to conquer the world by the peaceful arts of commerce and industry. Above all, the German army was regarded as the greatest and most efficient fighting machine on earth, while the ever-growing German navy, created in 15 years, stood second only to the British. German settlers and commercial branches of German firms — as well as banks — were scattered throughout the five continents, and German blood flowed in the veins of nearly all the European royal families. The ubiquitous penetration and expansion of Germany became a world wonder; her real and most profitable colonies were the countries she had never owned.

Increasing prosperity not unnaturally begets ambitions and aspirations which overflow the narrow confines of artificial frontiers, and this appears to have been the case with Germany. Her leaders of thought had for many years expounded the patriotic doctrine of German superiority and greatness. They argued, not without reason, that a nation which had achieved so much in the past was both capable and worthy of greater achievements in the future. Many of Germany's severest foreign critics ascribe a large share of responsibility for the war to the influence of Trietschke, Mommsen, Nietzsche, Frobenius, von Bernhardi and Count Reventlow. Each of these was an exponent of the gospel of force, of the survival of the fittest among nations, and of the natural predominance of the strong over the weak. Treitschke, paraphrasing what Luther said 400 years earlier, described war as the "drastic medicine of the human race"; he taught that the hope of banishing war was not only meaningless but "immoral," and that "its disappearance would turn

the earth into a great temple of selfishness.» He also expressed the utmost contempt for the «tottering British Empire.» Nietzsche instilled a new beatitude, «Blessed are the war-makers, for they shall be called, if not the children of Jahve, the children of Odin, who is greater than Jahve.» Mommsen preached hatred of England in his historical lectures and Count Reventlow and other writers issued pamphlets and articles aimed mainly or entirely against Great Britain. German fiction abounded in thrilling narratives of successful wars against England. Professor Delbrück compared the historical development of England with that of Holland, which, «without ever having been overcome in war, sank in the course of a single generation from the position of a great power to a state which is scarcely mentioned in history.» In his sensational book, 'Germany and the Next War' (1911), General von Bernhardi weighed up the possibilities of a European war with remarkable accuracy and stated that Germany must acquire more possessions in Africa — if necessary, at the cost of such a war. Years ago General von der Goltz wrote that «the prediction of a final struggle to assure the existence and grandeur of Germany is not a mere fancy born in the minds of ambitious fools,» but that it would «come one day inevitably, violent and serious as is every decisive struggle between peoples of whom the one desires to have its superiority over the others definitely recognized.» In 1900 a book appeared in Berlin entitled 'Deutschland beim Beginn des Zwanzigsten Jahrhunderts' ('Germany at the Beginning of the 20th Century'), in which the writer stated: «We consider a great war with England in the 20th century inevitable.» On 18 Jan. 1900 the *Koloniale Zeitschrift* remarked, «The old century saw a German Europe; the new one shall see a German world.» Two months later (28 March) the same journal said, «In the history of the world the 20th century will be called the German century.» In 'The Reckoning with England' by C. Eisenhart (Munich 1900), we are shown how Germany first destroys the Japanese navy, and afterward, while Great Britain is fighting Russia in Asia, Germany destroys the British fleet; finally, the «insolence» of the United States is punished by their utter defeat. Whatever weight might be attached to such bellicose utterances, their sources and the unanimity of sentiment pervading them could not fail to attract respectful attention. Even so high an authority as Prince von Bülow, then imperial chancellor, spoke in the Reichstag on 10 Nov. 1912 of «the determination of Germany to make its strength and capability prevail in the world.» So long ago as 23 Sept. 1898 the kaiser himself proclaimed at Stettin that Germany's future lay upon the water, while the year before (18 June) he had declared in a public speech at Cologne that «the trident (of Neptune) must be in our fist.» Reduced to simple terms, Germany aspired to become a «Weltmacht» or world power with extensive oversea possessions such as the British Empire is composed of. To promote this object the Bismarckian doctrine of «blood and iron» was sedulously instilled into the minds of the people by the ruling military caste. The German Navy League (Flottenverein) carried on a nation-wide propaganda by lectures and cinematograph shows, while the members of the Pan-German League (Alldeutscher Verband) supplemented the campaign with pamphlets bearing such titles as 'The Fatherland in Danger'; 'The British Peril'; 'The Next War,' etc. Throughout the agitation we invariably find Great Britain staged as the background of the scene. (See PAN-GERMANISM). The clearest explanation of this phenomenon was perhaps that of the late Joseph Choate, former United States ambassador to Great Britain: «But there was, and is, one insuperable obstacle in the way of this magnificent dream of a future world empire for Germany, and that is the accomplished, existing, actual world empire of Great Britain, of which England is the heart; and unless this obstacle can be removed, so that it shall never stand in the way again, the grand ideal of Germany's future can never be realized.»

Having thus far traced the fundamentals of German policy as proclaimed by Germany's representative spokesmen and revealed in her popular literature, it must be added that there existed two widely-differing schools of thought as to procedure in bringing that policy to fruition. While the militant section favored the forcible abolition of the British Empire, the other and more moderate point of view advocated a «working arrangement» with Great Britain, whereby the British Empire should be left intact and Germany given a free hand to expand elsewhere. Under the terms of such an understanding, according to Bernhardi's interpretation, England would have had to give up her claim to a predominant position throughout the world and recognize «that Germany possesses equal rights, side by side, with her,» and to agree beforehand to «any increase of Germany's power on the continent of Europe»; to «any possible change of the map of North Africa»; to «offer no opposition to Germany's economic expansion in Asia Minor,» and «no longer oppose the development of Germany's sea power by the acquisition of coaling stations.» Such an agreement, he believed, would assure European peace, and that «a powerful counterpoise would be created to the growing influence of the United States.» The result would have «the most far-reaching advantages, not only for England and Germany, but for all civilization»; but the basis of all negotiations between the two countries «would have to be the demand that England would have to leave the Triple Entente.» When, however, the writer asked himself the question, whether it was likely that England would enter upon such an agreement with Germany, he answered it with an «unconditional no.» ('Our Future: A Warning to the German Nation,' 1912).

Contrary to general outside opinion, the Germans are not essentially a warlike race; it was the stern Prussian military system that converted them into excellent fighting material. One must distinguish between Prussians and Germans. The former are a mixture of Slav and Finnish compounds, with a groove-like genius for unimaginative bureaucracy; the latter an industrious, peaceful and docile race. As one authority puts it, the Prussians were «the best machine-makers in the world, and their machine was all Germany.» Certain it is that no nation was so thoroughly and scientifically prepared for war as Germany. The Germans are a prolific race, and oversea colonies were

considered a vital necessity for their growing population. Large numbers emigrated every year to other countries. Transplanted on foreign soil, these were entirely lost to the homeland within two generations, losing their nationality and not infrequently their mother tongue unless they settled in German colonies, and very few did that. Emigration, however, had fallen off considerably during recent years before the war, owing to industrial progress at home. Some German authorities have even asserted that economic pressure and over-population were not the reasons for German emigration, in proof of which statement they pointed to the enormous number of foreign laborers, Italians, Hungarians and Russians employed in the country in normal times. But although the Germans were over 100 years too late to join in the scramble for colonial possessions and did not enter the lists until long after Spain, Portugal, Holland, France and England had staked out the best claims, they were nevertheless fairly successful in acquiring foreign territories. During about 16 years of colonial activity (1884–1900) the German Empire was able to annex some 1,028,020 square miles of territory with an estimated native population of about 12,000,000. In addition to this France had ceded to Germany in 1911 over 107,000 square miles of African (Congo) territory with a million population. The total number of Germans and other whites scattered over their colonial empire barely exceeded 25,000, composed mainly of troops and officials. The reason of this was the fact that desirable German emigrants had always exhibited a strong predilection for the English-speaking lands, while large numbers of them also settled in South America, South Africa and all the European countries — everywhere excepting in German colonies. Thus it appeared that German colonial acquisitions even at the average rate of 70,000 square miles per annum failed in the primary object of providing new homes for German settlers, though it must be conceded that former German East Africa (Dar-es-Salam), was the only possession that offered any attractive prospects; all the others were too distantly isolated, undeveloped, or unhealthy. It is worthy of note that Germany obtained all her former colonies while she had no navy; and those she had acquired, as Bernhardi confessed, "in agreement with England." Since 1900, when the German Navy Bill for doubling the strength of the fleet was introduced and passed, the only colonial addition to the empire consisted of the French Congo cession already mentioned, given by way of "compensation" over Morocco (q.v.). Up to the last few years of the 19th century we find Great Britain aiding the expansionist aspirations of Germany. The kaiser's telegram to President Kruger on 3 Jan. 1896 marks the turning point in British policy and the transformation of British sentiment toward Germany.

The violent epidemic of Anglophobia which swept over Germany during the South African War gained the popular support for the Navy Bill, the preamble to which set forth that "Germany must have a fleet of such strength that even for the mightiest naval power a war with her would involve such risks as to jeopardize its own supremacy." Not unnaturally, the British people read in the measure a direct challenge to themselves. Subsequent waves of Anglophobia spread in Germany during the Morocco crisis in 1906, the Austro-Serbian crisis of 1908, and the Agadir incident of 1911. Fresh navy bills were introduced after each of these events, with England ever held up as the danger point. There was no secrecy about German ambitions; they were publicly declared and indited to the world by the emperor himself, his leading lieutenants and a large school of writers. If it is true that the spirit of a nation is reflected in its literature, in the utterances of its leaders and the course of its domestic and foreign policies, no student of the antecedents of the European War can afford to ignore the testimony supplied by the Pan-Germanic propaganda. "God has called us to civilize the world," proclaimed the kaiser at Bremen; Dr. Giesebrecht asserted that "Domination belongs to Germany because it is a superior nation, a noble race, and it is fitting that it should control its neighbors"; while another popular writer, Herr Bley, stated, "We are the superior race in the fields of science and art . . . the best colonists, the best sailors, the best merchants." Field Marshal Bronsart Von Schellendorf wrote: "Do not let us forget the civilizing task which the decrees of Providence have assigned to us. Just as Prussia was destined to be the nucleus of Germany, so the regenerated Germany shall be the nucleus of a future Empire of the West. And in order that no one shall be left in doubt, we proclaim from henceforth that our continental nation has a right to the sea, not only to the North Sea, but to the Mediterranean and Atlantic. Hence we intend to absorb one after another all the provinces which neighbor on Prussia. We will successfully annex Denmark, Holland, Belgium, Northern Switzerland, and then Trieste and Venice; finally Northern France from the Sambre to the Loire. This program we fearlessly pronounce. It is not the work of a madman. The Empire we intend to found will be no Utopia. We have ready to our hands the means of founding it and no coalition can stop us." It may be noted that the proposed annexations included, besides portions of France, four independent states and also territory belonging to Germany's two partners then in the Triple Alliance. Coming, as it did, from a field marshal in the German army, such a pronunciamiento could hardly pass unheeded. Thus the German people, half consciously though inevitably, became aggressive and belligerent in spirit under the highest official and academic guidance.

The British people had witnessed the wonderful growth of Germany with mixed feelings of admiration and uneasiness. They had seen German enterprise invade all markets of the British Empire. Unprotected by tariff barriers, the United Kingdom especially was flooded with commodities bearing the legend, "Made in Germany." Yet the British continued to buy German goods because they needed them; because they were cheaper than the home product or because British-made equivalents did not exist. Until quite recent years, indeed, England was entirely dependent upon Germany for the carbons used in the searchlights of the British navy. Not only did the energetic Teuton run the conservative Briton close in every foreign market, but had even elbowed him out altogether in some. So far from adopting the

mother country's system of free trade or, more correctly, of free imports, the British self-governing dominions raised protective tariffs, in some cases granting preferential rates to the homeland. The economic necessities of a nation dictate its policy to a greater degree than purely political considerations, and it is in the domain of economics that perhaps one of the principal underlying causes of the war may be found. Nations, like individuals, live by their labor; their purchasing power is strictly regulated by the extent of their earning capacity. Growth of population demands increased production, for the disposal of which markets are essential. Great Britain and the United States were Germany's chief commercial rivals; in America she was faced with a formidable tariff wall, while similar restrictions confronted her in the British Dominions. The United Kingdom alone clung to "free trade," but its abolition seemed within measurable distance. The tariff reform and "Imperial Preference" campaign inaugurated by Joseph Chamberlain in 1903 gained millions of supporters throughout the empire and at home, and the probability loomed large that the vast territories it embraced would be closed to German trade. For years before the war Germany stood in a critical position. Her great industries had been built up under the fostering influence of the Zollverein. Bismarck's protectionist policy during the period 1880–91 had evoked reprisals from neighboring nations, and the number of open foreign markets diminished. At the same time Bismarck neglected to create a colonial empire capable of becoming a national receptacle for the over-production at home. An industrial crisis ensued and a stream of emigration followed. Between 1891 and 1907 Germany concluded a number of commercial treaties with other countries and soon began a vast exportation of raw and manufactured products, aided by a flexible but precarious banking system of financial and industrial credit. German banks were constantly being drained by advances to manufacturers and traders, and frequent appeals for foreign capital became necessary. Enormous sums were borrowed from French banks and, to a less degree, from British financiers. Recurring international political crises and rumors of war between 1906 and 1911 instantly closed these sources of fluid cash, and when, on such occasions, the creditors pressed for settlement, the German banks were obliged to pay with real money instead of promissory notes. An instructive object-lesson on the intimate relationship between finance and politics was furnished by the Agadir crisis in 1911. On 1 July the German cruiser *Panther* arrived at Agadir. Two months later Germany required $12,000,000 immediately, which was raised in the United States at 6 and 7 per cent; in normal times this money could have been obtained in Paris at 3 or 4 per cent. The system of making lavish advances to clients militated against the maintenance of adequate funds in hand, and it was not always easy for German savings banks to meet their liabilities in periods of panic, under the stress of which industry, trade and finance all suffered.

It was from outside, however, that German industry was more directly threatened. Even more than open markets in which to sell her goods, Germany needed an open market from which to buy other essential products, a real "matter of life and death."* With ever-increasing commercial and industrial competition to fight against, practically all the progressive countries had erected tariff walls to protect their home industries, the United Kingdom alone excepted. Germany herself was strongly protected by import duties, and when other states adopted like measures to favor their own industries, a conviction gradually grew among the German people that their country was being encircled, hemmed in, and deprived of its place in the sun; that a great conspiracy was afoot to throttle their national existence. In time, England came to be regarded as the instigator of this supposed plot, although the legend did not come into existence until the Anglo-French *rapprochement* in 1904.

Closely connected with the economic factors lay the question of overseas expansion, of colonization or at least the procuring of colonies by Germany. Bismarck, the creator of the former German Empire, could not foresee the great industrial nation that would arise on the foundations he had laid. He discouraged colonization in his own country and encouraged it in France and Russia. He had brought Germany to the zenith of her influence at the Berlin Congress (q.v.) and made her the dictator and umpire of Europe. After a victorious war, Russia emerged empty-handed from that historic gathering; Austria, a passive spectator and a potential German ally, was compensated for Sadowa by being presented with Herzegovina and Bosnia and the prospect of an outlet on the Mediterranean via Salonica. With the gates of Constantinople closed against her, Russia turned toward Central Asia, and France, still smarting under her defeat of 1870–71, was skilfully guided into a series of colonial adventures. (See FRANCE AND THE WAR; ITALY AND THE WORLD WAR). Germany stood aloof from colonial enterprise. Bismarck made an ally of Austria, embroiled France with Italy in northern Africa and successfully manœuvred the Italian kingdom into partnership with Germany and Austria to form the Triple Alliance (q.v.). But while this undoubtedly strengthened Germany's position in Europe, Bismarck committed two grave errors in sacrificing a colonial empire and making an enemy of Russia. He seems to have realized the latter mistake when it was too late, for he devoted the remaining years of his administration to determined efforts to restore friendship with Russia. At the Conference of Berlin in 1884 Bismarck half-heartedly accepted Togo, Kamerun and Southwest Africa to satisfy public clamor, though in principle he remained hostile to colonial expansion, regarding Germany's real historical mission as anchored in Europe. Between 1885 and the fall of Bismarck in March 1890, Germany acquired her former East African possession and some Pacific island groups. Her colonial expansion ended in 1899; there was no useful unclaimed territory left.

From the seeds sown by the Treaty of Frankfort in 1871 and the Berlin Treaty in 1878, Europe reaped a harvest of tragic results. By

* Her most pressing necessity was iron, as it still is to-day. The German iron-mines are not many years distant from exhaustion; just over the French border, in the basin of Briey, there is ore enough to last for 250 years.

the first instrument France lost Alsace and Lorraine; it left behind ineradicable sentiments of hatred and revenge and converted Europe into a great armed camp; the second granted an undeserved new lease of life to the Sick Man of Europe and violated that great principle of nationalities which has become the foundation of the political morality of Europe. The Serbs were the first of the Balkan peoples to throw off the Turkish yoke in 1804, and when the Bosnians rose in 1875 their kindred in Serbia and Montenegro cheerfully responded to the battle cry against the historic foe. Their victory seemed assured and the freedom of Bosnia accomplished when Austria intervened, and the subsequent Congress deprived Serbia of the fruits of her sacrifice and left Bosnia nominally under Turkish suzerainty but actually in the possession of Austria. Macedonia was handed back to Turkey, and Serbia was left to struggle against a new and powerful enemy, whose road to Salonica she barred by the mere fact of her geographical existence. Austria led Serbia into a disastrous war with Bulgaria in 1885, and was mainly responsible for the second Balkan War of 1913. Two further direct results of the Berlin Congress must be noted: It brought together the two nations which had suffered at the hands of Bismarck — France and Russia — into an alliance which placed Germany, situated in the centre of Europe, between two powerful enemies, one on each border. By saving the Turkish Empire from Russia, Bismarck had placed the Sultan Abdul Hamid II under obligations, with the result that shortly after, in the early 80's, German penetration in the Near East began to assume the shape of a settled policy which, under William II, developed into a quasi protectorate over the Mohammedan world and a program of German expansion via the Balkans and Constantinople to Mesopotamia and the Persian Gulf. During the 20 years of his rule after Sedan, Bismarck pursued a cautious policy of conservative concentration to consolidate the position he had won for Germany. His sacrifice of Russia's friendship at the Congress was unavoidable: he had to choose between that country and Austria, though he afterward concluded a "reinsurance treaty" with Russia, by which means he believed that he had isolated France and rendered her innocuous. He had no liking for England, yet he was careful not to endanger friendly relations with that country. "If I should discover that we might lose touch with England," he told the Reichstag on 26 Jan. 1889, "I should act cautiously and endeavor to avoid losing England's goodwill."

Not long after the retirement of Bismarck, German foreign policy began to shape a course that puzzled and not infrequently alarmed the chancelleries of the Old and the New Worlds. Concisely stated, that policy amounted to an insistent demand to play a leading part in the guiding and ordering of international affairs everywhere. Within two years of his accession the new emperor, William II, had "dropped the pilot" and taken full command. Whereas Bismarck had been content to make Germany the foremost power in Europe, William II undertook to transform her into a "Weltmacht" or World Power. There were but four states at the time to which the term world power could strictly be applied — Great Britain, United States, Russia and France. As has already been pointed out, Germany was a late comer in the competition for places in the sun; the hope of creating a new world power could hardly, apparently, be realized without the menace or exercise of force. It is significant enough that all of those four existing world powers were subsequently arrayed in armed conflict against Germany; that they were actively supported on land and sea by eight other independent states, while yet another 15 republics and one kingdom (Siam) signified their sympathy with the enemies of Germany by declarations of war or severance of diplomatic relations. Hemmed in on either side by France and Russia — one of them a mortal enemy — Germany beheld across the North Sea the island fortress of Great Britain, a country devoted for centuries to the principle of preventing any single power from dominating Europe. The British navy, furthermore, possessed the ability to close both exits from the North Sea to the Atlantic. Germany's only possible avenue to the outer world, following the line of least resistance, consequently lay to the south. Yet even a maritime outlet through friendly territory to the Mediterranean via the Adriatic or Ægean would avail little in wartime without command of the sea. An overland route through the Balkan Peninsula furnished the one alternative, and the road must necessarily lead through either Rumania or Serbia, in order to establish communication with places beyond Europe. But Rumania's situation on the Russian frontier offered no guaranty that such a passage could be kept open during war, hence the choice of a German corridor to the East was perforce limited to Serbia, a poor, sparsely populated country. To Austria, Serbia was a thorn in the flesh, a real danger to the stability of the former Dual Monarchy by reason of the Pan-Serbian agitation which threatened to detach territories and millions of Austrian subjects from the empire. Serbia also stood in the way of the Austrian "Drang nach Osten" policy — the march to Salonica. To Germany, on the other hand, an independent Serbia was a stubborn obstacle that blocked the road to Constantinople and beyond. The idea of Serbian unity, embracing the Jugo-Slavs (Croats and Slovenes) contained within itself the destruction of the Turkish and Austrian empires and the formation of a new independent state from the broken fragments of these two empires. Five centuries of Turkish effort had failed to stifle Serbian nationality, and upon that same rock the Hapsburg Empire beat in vain for 40 years, only to shatter itself in the end.

Besides Germany and Austria, there were two other powers which claimed interests in the Balkans — Russia and Italy. Of the four, the claims of Austria were no doubt the most justifiable. She was the next-door neighbor to the peninsula and her existence was threatened. Italy's interest was centred upon Albania, and more particularly the fine harbor of Valona, on the eastern shore of the Strait of Otranto and less than 50 miles from the Italian Coast. The first object of her policy was to prevent Austria from acquiring the port, while Austria strove to keep it out of Italian hands on account of its strategic position at the entrance

to the Adriatic. The two allies in the Triple Alliance worked actively against each other with the Albanian tribes, establishing rival educational institutions and medical missions in the country and seeking to extend their influence over the local chieftains. This procedure resulted in a stalemate which was recognized in a mutual self-denying ordinance concluded in 1906, by which both powers agreed to abstain from any attempt to obtain political dominion over the coveted territory; the matter was hung up till a more propitious moment might arrive for one or the other. While Italy desired to see Serbia strong enough to be troublesome to Austria, she supported Austria in preventing Serbia from gaining an access to the Adriatic, and since 1912 her policy has been markedly anti-Serb. The interest of Russia in the Balkans was rather sentimental than practical. Beyond a portion of Rumania, which is not strictly a Balkan state, none of the Slav states touched her territory. But Russia had constituted herself the protector of the Balkan Slavs, and had certainly contributed more than any other European power in liberating them from Turkish rule and securing their independence. While Austria was concerned in keeping the Slavs down and divided among themselves, Russia labored and intrigued to strengthen and unite them — under her hegemony. In how far this was part and parcel of Russia's aims on Constantinople may some day be revealed. Certain it is that the respective policies of Austria-Hungary and Russia in the Balkans were utterly irreconcilable; an accession of diplomatic "prestige" for the one meant a setback or defeat for the other. Bismarck had desired Austrian expansion toward the East, and was perhaps not ill content that her policy in the Orient should clash with that of Russia, for in this way Austria would have still more need of Germany and would gradually fall into dependence on Berlin. The process by which this was accomplished was not continuous; there were interludes of co-operation with Russia — as in the Macedonian question between 1903 and 1908; but, throughout, the ties with Germany in the Triple Alliance tended to be drawn closer, even before the final breach with Russia over the Mitrovitza Railway in 1908. The securing of this railroad passage by Austria involved the destruction of Serbia and the virtual incorporation of the western half of the Balkan Peninsula in the Monarchy, thereby opening a gate for the indefinite expansion of Germany eastward. For many years Austria employed methods of repression against Serbia. She had shut out the Serbs from the sea; it was her systematic policy to prevent any railways being built by Serbia, which might have provided outlets for her trade. In 1906 Serbia concluded a Zollverein (tariff or customs union) with Bulgaria. As soon as this was declared, Austria closed her frontier against Serbia and broke off negotiations for the renewal of the Treaty of Commerce with Serbia. As 80 per cent of Serbian produce passed into Hungary, a deadlock ensued and Serbian farmers were threatened with ruin; in the end Serbia had to submit to the terms dictated by Austria, which compelled her to buy her chief imports, including guns and ammunition, in the Austrian markets, and which made Serbia more than ever a vassal of Austria-Hungary, politically and economically. When the Serbians turned their attentions to Macedonia, they came into collision with Bulgaria. In 1908 Austria violated the terms of the Berlin Treaty by the annexation of Bosnia-Herzegovina — a challenge to Russia to contest Austrian supremacy in the Balkans. Russia encouraged Serbia and Montenegro to resist this final separation from their fellow Serbs and war appeared imminent in 1909, when the intervention of Germany confirmed Austria's action. The dreams of grandeur cherished by the Southern (Jugo) Slavs were until then still vague and undefined when the annexation translated them into action. Austria's step was an act of defiance to Slavdom, for it thrust a wedge into the very heart of the lands which the Southern Slavs regarded as their inheritance, and seemed to dissipate forever their dream of ultimate union. Russia, though diplomatically supported by France and Great Britain as signatories to the Berlin Treaty, retired from the controversy, perforce leaving Serbia and Montenegro to withdraw their claims. Austria and Germany had gained a great diplomatic victory; Russia had been driven from the field and Serbian aspirations seemed finally shattered. The incident was apparently closed; it emphasized the intention of Austria — supported by Germany — to allow no treaty obligations to interfere with her plans of aggrandizement.

Meanwhile, great changes had been taking place on the international chessboard. The German emperor's demonstrative visit to Constantinople and Palestine had led to valuable railway concessions into Asia Minor and ultimately into Mesopotamia. German military instructors, financiers and engineers were sent to Turkey, and Germany became the doctor to the Sick Man. In every crisis that set in — the Armenian and Macedonian atrocities and the Cretan insurrection — Germany stepped in and paralyzed European intervention. In 1897, while the hands of Abdul Hamed II still reeked with the blood of 200,000 Christians, the Cross and the Crescent were united in a strange alliance. The Bagdad Railway concession was granted at that time. Farther afield, German policy was active in the Far East. The Chino-Japanese War of 1894-95 drew attention to the helplessness or defenselessness of China. The sudden emergence of Japan as an up-to-date naval and military power had alarmed Russia, who scented a possible obstacle to her Far Eastern policy. In framing the treaty of Shimonoseki, Germany joined with Russia and France in coercing Japan to surrender the chief fruits of her victories in Manchuria. Russia stepped in later and seized Port Arthur while Germany acquired Kiao-Chau and the Shantung Peninsula from China. At two intervals of 10 years each Japan reaped her revenge against both those powers. The Tsar Nicholas was skilfully encouraged to expend his resources in a struggle with Japan for the mastery of the Far East. (See JAPAN — RUSSO-JAPANESE WAR). Other regions fell within the perspective of Germany. South America particularly attracted the kaiser's attention. That continent contained a large German population, but official activity was impossible there on account of the Monroe Doctrine, unless England

could be embroiled with the United States and British naval power enlisted as an ally. Early in the Spanish-American War a German attempt was made to organize a European coalition against the United States, an effort that was frustrated by Lord Salisbury in London, Lord Pauncefote in Washington, and Captain Chichester with a British squadron in Manila Bay. We have it on the unimpeachable testimony of Sir Valentine Chirol, who was specially invited to Berlin by Prince von Bülow at the time, that in October 1901 informal conversations were initiated in Berlin for a treaty of alliance between Great Britain and Germany, by which each party would have guaranteed to the other all their existing possessions throughout the world except in Asia. "There Germany had no intention of placing her sword at England's disposal against Russia. . . . One of the most singular features of this proposal was Germany's insistence that the provisions of this alliance should extend to the American continent, though neither in South nor in North America had Germany herself any possessions to be safeguarded. The peculiar insistence of Germany on this point was, it was urged, a proof of her singular disinterestedness. . . . But the snare was laid in vain. It was too obviously an attempt to commit us (Great Britain) to unlimited liabilities which would have some day compelled us to toe the line in a German campaign against the Monroe Doctrine and thus fatally embroil us with the United States. . . . The wooing throughout was entirely on the German side; and, after listening to what Germany had to say, Great Britain very soon indicated that conversations on such lines were not to her taste." (Consult *Quarterly Review*, October 1914, p. 415). The feverish restlessness of German policy created a widespread sense of alarm among other powers, induced them to reconsider their mutual relations and to draw closer together. The first move in this direction was the conclusion of a defensive treaty of alliance between Great Britain and Japan in 1902. In 1904 Great Britain and France composed their differences by the Anglo-French Agreement, popularly known as the Entente Cordiale. The next year, while Russia was suffering defeat in Manchuria and thus temporarily eliminated, Germany opened the Morocco controversy which led to the conference at Algeciras, at which Germany secured the recognition of her claim, but failed to shake Anglo-French friendship. In 1907 came the Anglo-Russian Agreement, thus forming a counterpoise to the Triple Alliance. The immediate object of the so-called Triple Entente was a mutual insurance against German pretensions. The terms governing the alliance between France and Russia were unknown to the British government up to the outbreak of the European War. On the other hand, Great Britain was not bound to her partners in the Entente by any conditions whatever, "no secret engagement," as Sir Edward Grey told Parliament on 3 Aug. 1914. The Entente, in fact, was simply a diplomatic group, not a strict alliance. German statesmen quickly realized, however, that this group meant the restriction of their ambitious intentions. It henceforth became their policy to break up — or break through — what they conceived to be an iron ring that had been forged around them. The Bosnia-Herzegovina crisis in 1908 brought war within measurable distance; from that stage it only remained a matter of time. In 1911 Italy declared war upon Turkey and annexed Tripoli and Cyrenaica, a move contemplated for many years. In the same year another Moroccan crisis darkened the political horizon. On this occasion Germany asserted that the French military occupation of the Moorish Empire formed a new situation, and that without some sort of compensation she would be unable to tolerate the existing state of affairs. The German gunboat *Panther* and the cruiser *Berlin* were sent to the closed port of Agadir, a manœuvre provocative to France. War again hung in the air, and Germany was eventually bought off by the cession to her of 100,000 square miles of French Congo territory. This was the last German attempt to break up the Triple Entente.

While Turkey had the Italian War on her hands, the Balkan League suddenly declared war on her and began hostilities in October 1912. Germany expected an easy victory for her friends the Turks. They were defeated, however, and the war was a crushing blow to both Austria and Germany. Besides, a formidable, resurrected Serbia now stood in the way, and behind her loomed the substantial power of Russia, protector of the Slav nations. Three haunting preoccupations hovered in the minds of German statesmen — the "Slav Peril" (Russia), the "Yellow Peril" (Japan), and the "British Peril." Of the three, they probably feared Russia the most. Her marvelous recuperative power, increasing prosperity, successful Balkan policy and, above all, her friendly relations with France and England, had firmly impressed the German mind that *Slaventum* and *Germanentum* must sooner or later come into collision. On the other hand, if Germany feared Russia, as considerable evidence seems to prove, it was nothing but fear of Germany that drove France, Great Britain and Russia into each other's arms. Undoubtedly, that group was a standing menace to Germany should she attempt to translate any ambitious projects into action. One by one Germany saw her avenues to expansion closing up around her. The Slav renascence had shut the door to the Near East; the proximity of Japan made the Far East too dangerous; South America was hedged by the Monroe Doctrine; Africa was already parceled out, and in almost every other part of the world there stood the empire of Great Britain. Here, indeed, was an *impasse* that could only be broken through by force. Germany's navy had reached a high stage of efficiency; she was already the strongest military power in the world, maintaining a peace army of nearly a 1,000,000 thoroughly trained men backed by millions more of equally efficient reserves. All these circumstances conspired to breed a conviction that war — somehow or somewhere — was inevitable, and that the sooner it came the better. In Austria-Hungary and Italy, furthermore, Germany had two powerful allies, while she also felt confident of the support of the Mohammedan world. The obstacles to be considered were France, Great Britain and Russia. Of these, France alone was presumably not a match against Germany; Russia had not sufficiently recovered from her

war with Japan, while Great Britain, it was supposed, would not fight. The opinion had long prevailed among military experts in Europe that Germany alone would be well equal to the task of dealing with France and Russia. The German plan of campaign in the event of a conflict with the Dual Alliance was well known years before the war. To take the route through Belgium, strike a decisive blow at France, dictate terms in Paris, and then turn with full force to the East before Russian mobilization could be completed. This was the essence of the strategy actually adopted, as it had frequently been discussed in French, German and British military periodicals. Signor Giolitti revealed in the Italian Chamber of Deputies on 5 Dec. 1914 that during his premiership in August 1913, while the Balkan peace conference was sitting in Bucharest, Austria communicated to Germany and Italy her intention of taking action against Serbia as a "defensive" measure. Italy refused to consider the plan; Signor Giolitti, absent from Rome at the time, sent the following message to the Italian Foreign Minister: "If Austria intervenes against Serbia it is clear that a *casus fœderis* cannot be established. It is a step which she is taking on her own account, since there is no question of defence, as no one is thinking of attacking her . . . and we must hope for action on the part of Germany to dissuade Austria from this most perilous adventure." From this it is evident that Austria intended proceeding against Serbia just a year before the war broke out. Italy refused to countenance Austrian aggression in 1913 and again in 1914, after war had been declared on Serbia, on the ground that it was an aggressive and not a defensive undertaking. There was also an understanding that Italy's obligation to the Triple Alliance should cease if the war in which Germany and Austria engaged should involve England as an enemy.

British relations with Germany during the years preceding the war are dealt with elsewhere. (See GREAT BRITAIN AND THE WORLD WAR). It only remains here to consider England as a potential enemy of Germany — from the German viewpoint as matters stood in 1913–14. The British army was then a negligible quantity in a hypothetical struggle in which millions alone counted. The aerial branch of the British fighting forces had been neglected, and England did not possess a single airship that could carry more than two or three men. The only thing to be feared at worst was the British navy, and that could do little harm so long as the German fleet remained in harbor and the German coasts were well mined. That German shipping would temporarily disappear from the seas was a foregone conclusion, but a violent offensive campaign would not last long; lightning tactics had not failed to win the day for Prussia in 1864, 1866 and 1870–71. There were other considerations that apparently precluded the probability of England joining in the fray. In addition to the Irish trouble, the smoldering animosity of Boer irreconcilables was expected to break into flames at the vision of recovering their independence, while the native populations of Egypt and India would probably rise in revolt and overthrow British rule. German naval expansion and the Pan-German propaganda had opened the eyes of many far-seeing public men in the British Isles; some, indeed, had counseled preparedness for 15 years before the war. Germany, they held, had no need of a great navy to protect her commerce, as alleged, since no one threatened that commerce, which could ride the oceans as freely and safely as the trade of any other country, even into the ports of London, Liverpool and Cardiff. There were some extremists who proposed that England should demand explanations and order Germany to limit her warship building program. Others, again, suggested that both powers should agree to a "naval holiday," but the three offers actually made to this effect were met with a candid *non possumus* by Germany. Thus the race of piling up floating armaments continued with unabated zeal and lavish expenditure. To each big German naval budget England replied with a correspondingly bigger one. Writers on both sides of the North Sea frankly discussed the prospects of an Anglo-German war. Under the operation of such mental stimulants it is hardly surprising that, by degrees, the conviction gradually crystallized in the minds of the British and German peoples that a war between them was inevitable. The Liberal Party in Parliament and the radical press clamored for reductions in both army and navy estimates, expressing a fear of "irritating Germany." The other side (Conservatives and Liberal Unionists) retorted that Germany was not afraid of irritating Great Britain. The persistent efforts of Germany to secure the neutrality of England during 1912–14 "in any conflict that might ensue" presents strong evidence that she neither intended nor perhaps expected England to participate in a war against her. Then came the Serajevo assassinations, which supplied the necessary spark to produce a conflagration. Much criticism has been leveled against Germany in general and the ex-Kaiser in particular for provoking or forcing the war. Judging from our present knowledge and especially the revelations of Prince Lichnowsky (q.v.), it is difficult to doubt that Germany desired the war; it is not equally certain that the former emperor could have prevented it had he chosen to do so. It is not improbable that he was not entirely master of the situation, for circumstances may force the hand of the strongest ruler just as economic and geographical pressure may drive a nation even against its own will. In a sense, Germany was in the position of a full-grown man compelled to wear the clothes of boyhood. All great nations throughout history have been built up by war and conquest. As history never stands still, those nations maintained their pre-eminence only so long as they were strong enough to defend and hold what they had gained. The late tsar's peace manifesto of 1898 gave a powerful impetus to international idealism throughout the civilized world, especially in the United States and Great Britain. Well-meaning writers like the Russian banker Bloch (whose great work, 'La Guerre' inspired the tsar), and Mr. Norman Angell, in his book, 'The Great Illusion,' have advanced many apparently cogent arguments that war was no longer possible. Looking back over the two decades 1898–1918 we encounter a series of great international conflicts.

At the time the peace and disarmament manifesto was launched the Spanish-American War was in progress; Kitchener was reconquering the Sudan; the South African War broke out in the following year; the next year (1900) all the great powers were rushing ships and troops to China; in 1904-05 Russia and Japan were at war; since then there have been numerous revolutions, regicides, some Balkan wars and the greatest war of all.

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2. DIPLOMATIC HISTORY. The spark that was indirectly responsible for the outbreak of the world conflagration was kindled in the little city of Serajevo, the capital of the former Austro-Hungarian province of Bosnia, on Sunday, 28 June 1914. On that day the archduke Francis Ferdinand, nephew of the late Austrian emperor Francis Joseph II and heir to the throne of Hapsburg, paid an informal visit to Serajevo with his morganatic wife, the Duchess of Hohenberg. As commander-in-chief of the army, the archduke had attended some manœuvres in the province, when he suddenly decided to inspect the troops in the capital. Driving slowly along in automobiles toward the Filipovitch Parade, where the troops were drawn up, a black parcel was thrown on the open hood of the archduke's car. He picked it up and threw it over the back of the car. It fell in the street and exploded in front of the second car, in which Count Boos Waldeck and the governor's aide-de-camp were seated. Both those officers and a number of spectators were wounded. A compositor named Cabrinovitch, a native of Herzegovina, had thrown the bomb and was promptly arrested. The remainder of the party then proceeded to the town hall, where an address was read by the mayor. The inspection over, the civic authorities endeavored to dissuade the archduke from riding again through the city. They had heard rumors and had received threatening letters. The archduke, a stern, determined man, resisted all entreaties — including those of his wife — and insisted on visiting those who had been wounded by the bomb explosion. On their way to the hospital along the Appel Quay another bomb fell close to the car, but failed to explode. Immediately a young Bosnian student named Prinzip sprang out from the crowd and fired at the archduke with a Browning pistol. Of three shots the archduke received two — one in the neck, which later proved fatal — and one reached his wife, who was struck in the body while attempting to shield him. The two victims were carried into the Government House, where the last sacraments were administered during a few moments' consciousness. Within an hour both were dead. The crime evoked a feeling of horror throughout the civilized world; universal sympathy went out to the venerable emperor on the latest tragedy of his tragic life. His wife had been murdered (1898); his only son had died by violence (1889); his brother had been executed (1867), and now his heir had also fallen a victim of assassination. To a great extent public opinion outside of the Dual Monarchy lay with Austria, especially when it was given out that the Serajevo murders had been plotted by a band of Serbian agitators, alleged to have been encouraged by the Serbian government to propagate a revolutionary movement among the Serb population of Bosnia and Herzegovina. That such a movement had been in progress for many years was undoubtedly true; while the alleged complicity of the Serbian government was never established, it was suggested that it had been guilty of criminal negligence in not curbing the unauthorized activities of the secret political societies engaged in Pan-Serbian propaganda. Competent observers were not slow to realize that the incident of the murder opened the way to unlimited possibilities in bringing to a head the triangular feud that had been smoldering for years — the quarrel between Austria-Hungary and Serbia on the one part, and the conflicting Balkan policies pursued by Austria and Russia on the other. A general outline of these different antagonisms is given elsewhere. See HISTORICAL INTRODUCTION in this department; also AUSTRIA-HUNGARY AND THE WAR; BALKAN LEAGUE; BALKAN WARS; BOSNIA AND HERZEGOVINA; RUSSIA AND THE WORLD WAR; SERBIA.

For many years Serbia had struggled for economic emancipation. Up to 1905 this little nation of farmers and stock-breeders remained in industrial dependence upon Austria, for quite two-thirds of her cattle, pork and other products of the soil went across the Austrian border. Austria's dream was to incorporate Serbia into her empire, and whenever the latter displayed signs of political independence, Austria applied economic pressure by closing her markets to Serbian cattle. In 1906 the Serbian premier, Pashitch, began to resist the Austrian tariff war that had broken out the previous year. He proposed and carried through a customs union between the three Slav Balkan states, Serbia, Bulgaria and Montenegro, thus laying the foundation for that Balkan League which six years later was to defy the time-worn European Concert. By this arrangement Serbian livestock was partially diverted from the former Austrian routes and transported by waterways to German markets, while another outlet was procured at Varna on the Black Sea in Bulgarian territory. A treaty of commerce was next concluded with France and by degrees the old trade channel through Bosnia and to the Dalmatian Coast diminished and Serbia was disposing of much of her cereals and pork without sending them through Austrian territory, i.e., via the Black Sea and Salonica as far as the Levant.

Direct communication was needed between the Danube and the Adriatic to complete Serbian independence; when claims were presented to annex a strip of the Adriatic coastline in November 1912, a war with Austria seemed imminent. Meanwhile, 8 Oct. 1912, Montenegro had begun operations against Turkey and ushered in the first Balkan War. Within a few days after the Balkan allies had joined in the hostilities, Austria beheld the Serbs in possession of Uskub, of Old Serbia, of a large piece of the Sanjak of Novi-Bazar, and making rapid strides for the Adriatic Coast, an unexpected proceeding that threatened to nullify Austria's consistent policy of 30 years: Serbia had broken her fetters and was no longer under Austrian tutelage. Under ITALY AND THE WORLD WAR it is shown that in August 1913, at the close of the second Balkan War, Austria proposed to start war against Serbia and endeavored

to enlist Italian support for the venture. The prompt refusal of Italy to countenance any such aggression merely postponed the war to a later date. Ten months after came the Serajevo tragedy. For 18 months before that a violent press campaign against Serbia had been raging in Austria-Hungary, and it needed only a slight aggravation of the situation to provoke a conflict. The assassinations provided the Austrians with the necessary lever for action. Unfortunately, the Serbians had not enjoyed a very enviable reputation in Europe since the murder of their King Alexander and Queen Draga in 1903, and it was generally felt that Austria would be justified in exacting reparation for the Serajevo outrage; indeed, little sympathy with Serbia existed in either France or Great Britain. It was otherwise with Russia, the protector of the Slav nations, the country which, curiously enough, had been the principal agent in liberating the Balkan Peninsula from Turkish rule and securing that freedom for the small nations which she denied the people within her own borders. It was no secret in Europe that Russia would never stand aside and see Serbia perish, a contingency which could be regarded only as an Austrian victory over Russia. Therein lay the great danger to the peace of Europe — of the world.

The murders happened on 28 June. For 25 days no word nor sign emanated from the Vienna Foreign Office. Anti-Serb riots broke out in Austrian territories; mobs in Vienna threatened the Serbian legation, while the Austro-Hungarian press clamored violently for the chastisement of Serbia. Disinterested powers began to exercise what influence they possessed in endeavoring to reconcile justice with peace. But while the trend of public opinion both in Austria-Hungary and Germany was plain enough, the intentions of the Austrian government were shrouded in mystery. On 7 July the Serbian minister in Vienna, M. Yovanovitch, wired to his government «Whether it is proved or not that the outrage has been inspired and prepared at Belgrade, they [the Austrians] must now or later solve the question of the so-called Great Serbian agitation within the Hapsburg Monarchy.» As late as 20 July the same minister wrote: «It is very difficult, almost impossible, to discover here [in Vienna] anything positive as to the real intentions of Austria-Hungary. . . . There is, however, no place for optimism. . . . That which is chiefly to be feared, and is highly probable is, that Austria is preparing for war against Serbia.» Not alone in Serbia was there anxiety; a feeling of intense uneasiness hovered over Europe, where the consequences of any possible action on the part of Austria were fully appreciated. On 22 July the Hungarian Minister-President stated in Parliament that the situation did not warrant the opinion that a serious turn of events was necessary or even probable. The very next day came the first premonition of the approaching storm, when Count Berchtold (q.v.) launched the fateful ultimatum at Belgrade. In this document the Austro-Hungarian foreign minister reviewed the past relations between the two countries and called upon the Serbian government to publish a regretful and semi-apologetic declaration on the front page of their *Official Journal* on 26 July. The following 10 demands were also made: That the Serbian government should undertake (1) to suppress any publication which incited to animosity against Austria; (2) to dissolve a certain nationalist society (Narodna Odbrana) and prevent others from being formed; (3) to eliminate all anti-Austrian doctrines from public instruction; (4) to remove from military service and administrative departments officers and officials guilty of plotting against Austro-Hungarian integrity; (5) to accept the collaboration *in Serbia* of Austro-Hungarian government officials to assist in suppressing the movement; (6) to take judicial proceedings against persons accessory to the assassination plot, Austrian officials to take part in the investigations; (7) to arrest Major Voija Tankositch and a state employee named Milan Ciganovitch; (8) to prevent co-operation of Serbian authorities conducting traffic in illicit arms and explosives across the frontier, and punish those who had facilitated that traffic in aid of the perpetrators of the Serajevo crime; (9) to explain utterances of high Serbian officials who expressed hostility to the Dual Monarchy; and (10) to notify the Austro-Hungarian government that the above demands have been complied with. This ultimatum was to be accepted in 48 hours, by 6 o'clock on Saturday evening, 25 July 1914.

The charges formulated against the two Serbian officials mentioned in the document were those of having aided and abetted the perpetrators of the crime. Three principals had been arrested on the spot: Nedeljko Cabrinovitch, who threw the first bomb; Trifko Grabesh, who threw the second bomb, and Gavrilo Prinzip, who had fired the fatal shots. These three had originally in their possession (according to the Austrian statement) six bombs and four Browning pistols with ammunition. Ciganovitch and Tankositch were accused of having supplied these weapons; the former was alleged to have instructed the three conspirators how to use the bombs and to have given Prinzip lessons in handling the pistol in a certain forest. Ciganovitch was also charged with having enabled the assassins to smuggle the weapons across the frontier. Furthermore, the bombs were said to be hand grenades from the arms depot of the Serbian army at Kragujevatz. These details appeared in a brief summary annexed to the ultimatum.

While the Serbian reply to the Austrian ultimatum was pending, the German ambassadors in Saint Petersburg, London and Paris called upon the respective foreign ministers of Russia, Great Britain and France and informed them that Germany approved the form and substance of the Austrian note, adding that, if the quarrel between Austria and Serbia were not localized, dangerous friction might arise between the Triple Entente and the Triple Alliance. Sir Edward (now Lord) Grey, on behalf of the British government, at once informed Count Mensdorff, the Austrian ambassador in London, that he had never before seen one state address to another independent state so formidable a document. He specially deprecated the imposition of a time-limit at this stage of the proceedings, as it allowed no time for mediatory measures. On 24 July the German government communicated a note to the powers declaring the guilt of Serbia and that the Austrian demands could only be regarded as «equitable and moderate,» emphasizing at the

same time that "every interference of another power would, owing to the different treaty obligations, be followed by incalculable consequences." In reply, Sir Edward Grey reminded the German ambassador in London, Prince Lichnowsky (q.v.), that some days before the latter had expressed a personal hope that England would endeavor to use moderating influence with Russia, but now, in view of the seriously stern character of the Austrian note and the shortness of time allowed, he (Sir Edward) felt quite helpless so far as Russia was concerned, and he did not believe any power could exercise influence alone. The only chance he saw was that the four disinterested powers, Germany, France, England and Italy, should work together simultaneously at Saint Petersburg and Vienna in favor of moderation in the event of the relations between Austria and Russia becoming threatening. The British representative at Belgrade was at once instructed to the effect that Serbia should give Austria the fullest satisfaction; that "she certainly ought to express concern and regret." The ultimatum brought forth the following from that influential German newspaper, the *Rheinisch-Westphälische Zeitung*, on 24 July:

> The Austro-Hungarian ultimatum is nothing but a pretext for war, and this time a dangerous one. As it seems, we are on the brink of an Austro-Serbian war. . . . It is a shame if the Imperial Government had not required that demands of this kind should be submitted to it beforehand. Our one duty now is to declare that we are not under any obligation to launch into a war to further the aggressive policy of the Hapsburgers.

Everything depended upon Germany at this critical juncture; as the Russian foreign minister, M. Sazonov, said a few days later, the key of the situation was to be found at Berlin. Privately the German foreign minister expressed his doubts as to the ultimatum; officially, the German government regarded it as "equitable and moderate" and "desired urgently the localization of the conflict," although, on this date, 24 July, there was as yet no conflict to localize. On that same morning M. Sazonov summoned the French and British ambassadors in Saint Petersburg and bluntly told them that Austria's action meant war, and he asked for the support of France and Great Britain. The French ambassador pledged the support of France, as was inevitable under the terms of her alliance. The British ambassador, Sir George Buchanan, could give no such assurance on behalf of his country. The next day, 25 July, Sazonov made the following gloomy though truthful prophecy to Buchanan: "Austria's action," he said, "is in reality directed against Russia. She aims at overthrowing the present *status quo* in the Balkans and establishing her own hegemony there. I do not believe that Germany really wants war, but her attitude will be decided by yours [the British]. If you [Great Britain] take your stand firmly with France and Russia there will be no war. If you fail us now, rivers of blood will flow, and you will in the end be dragged into war." The British ambassador replied that England could play the rôle of mediator at Berlin and Vienna to better purpose as a friend who, if her counsels of moderation were disregarded, might one day be converted into an ally [of Russia] than if she were to declare herself Russia's ally at once. (British 'White Paper,' Exhibit No. 17). To this M. Sazonov answered, "Unfortunately Germany is convinced that she can count upon your neutrality." This assertion suggests the question, would there have been no war if Great Britain had from the beginning declared herself an active partner in the Triple Entente? On 30 July, two days after the war had begun between Austria and Serbia, President Poincaré expressed the same opinion to the British ambassador in Paris: "The President is convinced that peace between the powers is in the hands of Great Britain. If His Majesty's government announced that England would come to the aid of France in the event of a conflict between France and Germany as a result of the present differences between Austria and Serbia, there would be no war, for Germany would at once modify her attitude." (Sir F. Bertie to Sir E. Grey; *op. cit.* 99).

To return to the ultimatum. Acting on Russian advice, the Serbian government yielded all the 10 points with two reservations — articles 5 and 6 — which they asked to be permitted to submit to The Hague Tribunal. At 6.30 on the Saturday evening, half an hour after the expiration of the time-limit, the Austrian minister, Baron Giesl, left Belgrade, having announced that nothing short of complete acceptance would suffice. Serbia urged that the two points to which she could not categorically agree were of a nature calculated to subvert her sovereign independence and contrary to her constitution. From this stage began a week of feverish diplomacy to avert the impending catastrophe. All the governments concerned have since published more or less of the official correspondence that was flashed from capital to capital during those momentous days. Whereas the German side laid the blame for the war first on Russia and later on Great Britain, the British, French and Russian authorities accused Germany — and not so much Austria — of being primarily responsible. The British diplomatic record was first issued as a 'White Paper' on 5 Aug. 1914 and later published in pamphlet form with the heading, 'Great Britain and the European Crisis.' It gives what purports to be a complete account of all the communications that passed between the Foreign Office and its representatives in European capitals from 20 July to 4 Aug. 1914, with two memoranda written in London by Sir E. Goschen and Sir M. de Bunsen, former ambassadors to Berlin and Vienna; these are dated 8 August and 1 September respectively. There seems no reason to believe that important documents were omitted. The French 'Yellow Book' appeared in November 1914 in French and English and contains a complete record of the negotiations. The Russian 'Orange Book' (September 1914) is less complete. The Austrian 'Red Book' did not appear till January 1915 and gives a detailed statement of Austro-Serbian relations. It contains very little information of Austro-German relations, but much space is devoted to the negotiations with Russia. The Serbian 'Blue Book' and the Belgian 'Grey Book' cover less ground, but contain the full texts of important documents. On 4 Aug. 1914 the German government issued a "provisional memorandum" entitled "Vorläufige Denkschrift und Aktenstücke zum Kriegsausbruch." It contains fragments of dispatches; also the telegrams exchanged between the kaiser and the late tsar,

excepting the one from the latter suggesting that the Austro-Serbian problem be laid before The Hague Tribunal. An English translation issued by the German government bore the title of the German 'White Book.' Both the German and Austrian records leave much to be desired; they are not consecutive narratives and produce no evidence of German "diplomatic pressure" having been exerted on Austria in favor of moderation or a desire to preserve peace, as German statesmen had frequently asserted.

Diplomatic relations between Austria and Serbia were severed on 25 July, though war was not immediately declared. The next day M. Sazonov told the Italian Ambassador that Russia would employ all diplomatic means to avoid a conflict and that she did not give up hope that mediation might lead Austria to a less uncompromising attitude; but that Russia could not be asked to allow Serbia to be crushed. Thus the alternative that faced Europe on 25–26 July 1914 amounted to this: Unless Austria was willing to suspend her action she would inevitably and quickly come into collision with Russia. The unexpected ultimatum, the short time limit, and the refusal to extend it in order to permit mediatory discussion, justified the general belief that Austria was determined to institute military operations against Serbia at once. In view of the enormous disparity existing between the relative military strength of Austria and Serbia, such a lightning campaign would almost inevitably end in the defeat and occupation of Serbia, thus producing the very situation — that of a *fait accompli* — which Russia was equally determined to prevent. Geography made it impossible for Russia to send military assistance into Serbia; she could only act upon Austria herself, and whatever steps might be taken with the object of restraining Austria would necessarily have to be immediate and decisive. Only two ways of exerting pressure were feasible — either a formal announcement to Austria that an attack on Serbia would be regarded as a declaration of war against Russia, which was liable to provoke war immediately — or a continuance of friendly negotiations accompanied by a partial mobilization on the Austrian frontier to strengthen the diplomatic protest. The alliance between Austria and Germany being specially directed against Russia, it was not improbable that either method would lead to war, though the second alternative, eventually decided upon by Russia, gave the better promise of a pacific result. According to the French acting foreign minister, M. Bienvenu-Martin, the Imperial Council of Ministers met in Saint Petersburg on 25 July in the presence of the tsar, when the mobilization of 13 army corps intended eventually to operate against Austria was considered. This mobilization, however, was only to be made effective if Austria were to bring armed pressure to bear upon Serbia, and not till after notice had been given by the foreign minister, upon whom devolved the duty of fixing the day, with liberty to continue the negotiations even if Belgrade should be occupied. Russia's policy to this stage had been clearly defined and openly avowed. She had successfully advised Serbia to submit to all possible demands, but had also declared that she would not desert her if war nevertheless should ensue. Mobilization, if only partial, was obviously necessary to back up this determination. It remained for Austria to decide whether the satisfaction of "punishing Serbia" was worth embroiling, so far as could then be foreseen, herself, Germany, Russia and France in a general war.

From the German point of view, as expressed at the time by all the German ambassadors, the turn of events depended upon Russia; the latter had only to withdraw and acquiesce in any action taken by Austria. On 21 July the Russian ambassador at Vienna had been assured that the forthcoming demands on Serbia "would be thoroughly acceptable." He accepted this assurance and went away on his summer vacation, with the result that there was no Russian representative in Vienna when the crisis became acute; furthermore, half the ambassadors in Europe were away on leave at the time President Poincaré of France and his foreign minister, M. Viviani, were on the sea, returning from a visit to Russia. All the German and Austrian accredited diplomats were at their respective posts. While the French and British correspondence shows the endeavors of the Triple Entente to compose the quarrel, we have to search the records published at a much later date in order to arrive at any knowledge of what were the intentions of Germany and Austria. It was not until October 1919, nearly a year after the cessation of hostilities, that Count Berchtold informed a correspondent of the *New York American* that the repeated conversations he had had with the German ambassador von Tschirschky in Vienna in 1914 "could create no other impression than that the German government expected warlike action" on the part of Austria as against Serbia. "Especially a conversation I had with him during the early half of July," said Berchtold, "convinced me that if we did not show this time that we were in earnest, then on the next occasion Berlin not only would not support us but would in fact 'orient' itself in some other direction." In June 1918, Mr. Morgenthau, United States ambassador in Constantinople 1913–16, published in *The World's Work* that the German ambassador Wangenheim at Constantinople had gone to Berlin early in July 1914 and, on his return to Constantinople shortly after, had told him (Mr. Morgenthau) that he had attended a conference at Potsdam over which the kaiser presided. "Wangenheim now told me that the kaiser solemnly put the question to each man [present] in turn, was he ready for war. All replied 'yes' except the financiers. They said that they must have two weeks to sell their foreign securities and to make loans . . . then the several members went quietly back to their work or started on vacations. The kaiser went to Norway on his yacht, von Bethmann-Hollweg left for a rest, and Wangenheim returned to Constantinople." Continuing his narrative, Mr. Morgenthau says, "In telling me about this conference, Wangenheim, of course, admitted that Germany had precipitated the war. I think he was rather proud of the whole performance; proud that Germany had gone about the matter in so methodical and far-seeing a way; especially proud that he himself had been invited to participate in so momentous a gathering. . . . The conspiracy that has caused this greatest of human tragedies was

hatched by the kaiser and his imperial crew at this Potsdam conference of 5 July 1914. One of the chief participants, flushed with his triumph at the apparent success of the plot, told me the details with his own mouth." The Serbian minister Yovanovitch, already referred to, published a report of a conversation he held with von Tschirschky in Vienna (apparently before the Serajevo affair), in which he begged the German ambassador to use his influence in Vienna in the direction of a pacific settlement of the Oriental Railways and the revision of the Treaty of Bucharest questions. The German replied, "Until there has been a war between you and Austria-Hungary, not one of the questions that you are actually negotiating with that country can be settled. Yes! first the war, and then the settlement." (*Balkan Review*, London, March 1919). Again, on 25 July 1914 Count Szogyény, Austro-Hungarian ambassador in Berlin, telegraphed to the minister of foreign affairs at Vienna, "It is generally admitted here [in Berlin] that, in case of a possible refusal by Serbia, our immediate declaration of war will coincide with the military operations. A delay in the initiation of military operations is considered here as a great danger because of the intervention of other powers. We are urgently advised to begin immediately and to confront the world with an accomplished fact." (M. Barthou in the French chamber, before the peace committee, 7 Aug. 1919). Two days later, when Serbia had replied, Szogyény telegraphed: "The Secretary of State [Herr von Jagow] informs me in a very clear and confidential statement that in the near future possible proposals of mediation on the part of England may be sent to your Excellency by the German government. The German government binds itself in the most solemn way not to associate itself in any way with these proposals; on the contrary, it is absolutely opposed to their examination and will transmit them only to comply with England's request." (*Current History*, New York, October 1919). Five days before the ultimatum was launched, the Bavarian minister in Berlin notified his government in Munich on 18 July 1914 that he had had an interview with the German Under Secretary for Foreign Affairs, from whom he gathered that "The step which the Vienna Cabinet has decided to take at Belgrade . . . will occur on the 25th of the present month. The deferring of this action until that time is based on the desire to await the departure of MM. Poincaré and Viviani from Saint Petersburg in order to make an agreement between the Dual Alliance Powers [Russia and France] for counteraction more difficult. Until that time the appearance of pacific intentions will be feigned in Vienna by the simultaneous granting of leave of absence to the minister of war and the head of the General Staff." The last-mentioned official, who was field marshal Conrad von Hoetzendorff, began the publication of his recollections in April 1919, nearly six months after Austria had suffered defeat. In these he testifies to returning from a feigned holiday in Tyrol (where he had gone after the Serajevo affair), and attending a meeting of ministers at the foreign office in Vienna. Count Berchtold presided and asked the field marshal's advice on some military details. The latter did not conceal his opinion that the monarchy was unequal to the demands of war on three fronts. Three days later von Hoetzendorff was present when the late Emperor Francis Joseph signed the declaration of war.

War was declared on Serbia 28 July 1914. On 29 July Dr. von Bethmann-Hollweg, German Imperial Chancellor, told the British ambassador that he was "pressing the button" as hard as he could in Vienna, but was not sure whether he had not gone so far in urging moderation at the Austrian capital that matters had been precipitated rather than otherwise. On the surface it appeared as though every one of the powers was working hard to preserve peace with, apparently, one exception — Austria, for on the morning of the day when the ultimatum had expired the Vienna press comments left "the impression that the surrender of Serbia was neither expected nor really desired." Great Britain participated in three attempts for peace. Seconded by Russia she had urged Vienna to extend the time limit and together they had begged Germany to join in this effort. Berlin consented to pass the message on to Vienna. Nothing availed to avert the catastrophe. Austria had refused extension of time; the German ambassador in Vienna told his British colleague there that the Serbian concessions were a sham; that Austria was determined to punish Serbia; that Russia would keep quiet during the process and, finally, that Germany knew very well what she was about in backing up Austria in the matter. ('White Paper,' No. 32). Austria had disclaimed any intention of taking Serbian territory, though Russia certainly did not believe that Austria, once at war, would or could stop short of crushing Serbia entirely. Every diplomat foresaw what would happen unless Austria or Russia gave way: Russia coming to the aid of Serbia would inevitably bring Germany to the side of Austria; France would just as inevitably join Russia.

So far, at least five nations would be involved. There yet remained two unknown quantities — Great Britain and Italy. True, Italy was a partner with Germany and Austria in the Triple Alliance, but very few who had followed European affairs closely since 1905, seriously believed that Italy would join her allies in a war against France. The conditions which had originally led Italy into that alliance no longer existed. Above all, and this was a circumstance of which the outside world was unaware until two months after the end of the war, namely, that Italy and France had concluded a secret treaty in 1902. For Italy it was a "reinsurance" treaty precisely as those which Bismarck had concluded with Russia. By this instrument Italy and France mutually undertook not to participate in any war against the other. Signed in November 1902, the text of this treaty remained strictly secret; the mutual promise therein made and kept contributed decisively to maintain the peace of Europe for 12 years, and when the Great War came, the pact of 1902 was found to be so completely in harmony with Franco-Italian sentiments and interests that one might say no diplomatic act was ever more ratified by peoples and events. In the circumstances, therefore, the existence of this treaty being unknown at the time, the Central Powers probably expected Italy would preserve a "friendly neutrality." An important question asked, not only by Europe and the

world at large, but by the British people themselves was — what would Great Britain do?

On 26 July 1914 Sir Edward Grey submitted to Paris, Berlin and Rome his proposal for the ambassadors of those three disinterested powers to meet him in conference in London, suggesting that Austria, Russia and Serbia should meanwhile suspend all active military operations pending the result of the conference. France and Italy agreed at once and Russia declared her readiness to stand aside; Germany alone rejected the proposal on the ground that it would practically constitute a "court of arbitration" and proposed instead that Austria and Russia should negotiate directly with each other. Considering that those two powers followed two utterly irreconcilable policies, the German counter-proposal promised little hope of a peaceful solution. However, negotiations were actually begun between Saint Petersburg and Vienna when Austria suddenly declared war. Moreover, as Austria had refused even to discuss the Serbian reply, there could hardly be useful grounds for negotiation with Russia, seeing that the Serbian reply was the paramount point at issue in the whole dispute. M. Sazonov urged Sir Edward Grey to induce Germany to indicate, even at the 11th hour, under what terms she would consent to work for a peaceful settlement. The final stage of the crisis was reached on 29 July: Russia was partially mobilizing in her southern provinces; the Austrians were bombarding Belgrade; Belgium was mobilizing for self-defense; the German High Sea Fleet was recalled to port and the British navy was concentrating in the North Sea. Never, perhaps, in its long history had the world experienced a more dramatic day. At 4 in the afternoon Sir Edward Grey telegraphed to Berlin as requested by M. Sazonov, urging the German government, if they did not like the idea of the ambassadors' conference in the form he had suggested, to suggest any other form they pleased. "Mediation," he said, "was ready to come into operation by any method that Germany thought possible if only Germany would press the button in the interests of peace."

At midnight, a council of war was held at Potsdam, presided over by the kaiser. Judging from what followed immediately after that meeting, there is reason to believe that its deliberations were concerned less with the question of peace or war than with the problem of Great Britain's attitude in the event of war. Straight from the council chamber, the Imperial Chancellor sent for the British ambassador and made "the following strong bid for British neutrality": So far as he (the Chancellor) was able to judge the main principle which governed British policy, "it was clear that Great Britain would never stand by and allow France to be crushed in any conflict there might be. That, however, was not the object at which Germany aimed. Provided that neutrality of Great Britain were certain, every assurance would be given to the British Government that the Imperial Government aimed at no territorial acquisitions at the expense of France should they prove victorious in any war that might ensue." (*Op. cit.* No. 85) The ambassador then asked the chancellor about the French colonies, to which the latter replied that he was unable to give a similar undertaking in that respect As to Belgium, he said that it depended upon the action of France what operations Germany might be forced to enter upon in Belgium, but when the war was over, Belgian integrity would be respected if that country had not sided against Germany. Continuing, the chancellor said that ever since he had held office he had labored to bring about an understanding with England. What he had in mind was a "general neutrality agreement" between England and Germany and that "an assurance of British neutrality in the conflict, which the present crisis might produce, would enable him to look forward to the realization of his desire." At this stage the ambassador presented the following note he had received from Sir Edward Grey earlier in the day: . . . "The Chancellor may rely upon it that this country will continue, as heretofore, to strain every effort to secure peace and to avert the calamity we all fear. If he can induce Austria to satisfy Russia and to abstain from going so far as to come into collision with her, we shall join in deep gratitude to his Excellency for having preserved the peace of Europe."

Within a few hours the British answer to the German proposal arrived in Berlin: "His Majesty's Government cannot for a moment entertain the Chancellor's proposal that they should bind themselves to neutrality on such terms. What he asks us in effect is to engage to stand by while French colonies are taken and France is beaten so long as Germany does not take French territory as distinct from the colonies. From the material point of view such a proposal is unacceptable, for France, without further territory in Europe being taken from her, could be so crushed as to lose her position as a great power, and become subordinate to German policy. Altogether apart from that, it would be a disgrace for us to make this bargain with Germany at the expense of France, a disgrace from which the good name of this country would never recover. The Chancellor also in effect asks us to bargain away whatever obligation or interest we have as regards the neutrality of Belgium. We could not entertain that bargain either. . . . You should speak to the Chancellor in the above sense, and add most earnestly that the one way of maintaining the good relations between England and Germany is that they should continue to work together to preserve the peace of Europe; if we succeed in this object, the mutual relations of Germany and England will, I believe, be *ipso facto* improved and strengthened. . . . And I will say this: If the peace of Europe can be preserved, and the present crisis safely passed, my own endeavor will be to promote some arrangement to which Germany could be a party, by which she could be assured that no aggressive or hostile policy would be pursued against her or her allies by France, Russia, and ourselves, jointly or separately . . . If this present crisis, so much more acute than any that Europe has gone through for generations, be safely passed, I am hopeful that the relief and reaction which will follow may make possible some more definite *rapprochement* between the Powers than has been possible hitherto." On the same day (30 July) that Sir Edward Grey made this unequivocal declaration of British policy, he also telegraphed to the British ambassador in Berlin, "I have warned Prince

Lichnowsky [German ambassador in London] that Germany must not count upon our standing aside in all circumstances.» A slight ray of hope flashed across the darkening sky; Austria seemed for the moment to tremble at the storm she had raised and Prince Lichnowsky informed Sir Edward Grey (30 July) that the German government would endeavor to influence Austria, after taking Belgrade and Serbian territory near the frontier, to promise not to advance further, while the powers endeavored to arrange that Serbia should give satisfaction sufficient to pacify Austria. The territory thus occupied «would of course be evacuated when Austria was satisfied.» This simple plan originated with Sir Edward Grey himself and provided an admirable exit from the political impasse. It allowed Austria to retire gracefully and save her face, while Serbia was «chastised.» But a military plus a diplomatic victory in the Balkans for Austria could hardly be agreeable to Russia. Moreover, Austria had broken off conversations with Saint Petersburg by the declaration of war. The British ambassador in Rome wired on 30 July that the Italian foreign minister «had reason to believe that Germany was now disposed to give more conciliatory advice to Austria, as she seemed convinced that we [Great Britain] should act with France and Russia and was most anxious to avoid issue with us.» But he added, «It would be useless to ask for anything less than was contained in the Austrian ultimatum, and Germany would support no proposal that might imply non-success for Austria. . . . There was still time so long as Austria had received no check.» Germany had handed the proposal to Austria (respecting Serbian territory) on 29 July, and that same night Russia offered to stop all military preparations, if Austria would recognize that the conflict with Serbia had become a question of general European interest and would eliminate from her ultimatum the points which involved a violation of the sovereignty of Serbia. This offer came late at night; during the day the German ambassador had informed M. Sazonov that Germany had decided to mobilize if Russia did not stop her military preparations. This statement is not mentioned in the German 'White Book.' Sazonov replied that the Russian preparations had been caused, on the one hand, by the obstinate and uncompromising attitude of Austria and on the other hand by the fact that eight Austro-Hungarian army corps were already mobilized. Russia decided then to mobilized all her strength.

The British reply to the German neutrality proposal was handed to the chancellor on 31 July, and on the same day Austria at last agreed to do the very thing she had refused to do in the first days of the crisis, namely, to discuss the whole question of her ultimatum to Serbia. Russia asked the British government to assume the direction of these discussions. Conversations took place in Vienna and negotiations were resumed in Saint Petersburg; Sir Edward Grey begged the chancellor to encourage them and for a few hours there seemed to be a hope of peace. Unfortunately, there were various stumbling blocks in its path, besides the obviously determined militancy of Austria, namely, mobilization and mutual suspicion. Austria, being actually at war, was naturally continuing her mobilization; Russia had begun to mobilize on her Austrian frontier, while Germany may be said to have been more or less mobilized for years. Each side complained of the other's mobilization, and in each case the stereotyped retort was to the effect that «we cannot afford to lose the time which is being employed by other powers in making preparations against us.» Undoubtedly, there was justification in preparing for the worst, it being the first duty of a government to provide its country with adequate defense and to be prepared for every possible emergency. The other obstacle, suspicion, was perhaps equally formidable. Austria mistrusted Serbian assurances; Russia suspected Austria's intentions with regard to Serbia's independence and integrity, and furthermore mistrusted the entire Austrian policy in the Balkans, a sentiment that was fully reciprocated by the Dual Monarchy. Germany suspected the Triple Entente of aggressive designs against her; France, Russia and England suspected Germany of aggressive designs and regarded Austria as her tool; Belgium suspected German intentions with regard to her neutrality, and so on. Overshadowing all was the determination on the part of Germany to force the war that was long regarded by her statesmen as «inevitable.» On this point we have the evidence of Prince Lichnowsky in his famous 'Memorandum': «I was to work for the localization of the conflict. It naturally only needed a hint from Berlin to induce Count Berchtold to content himself with a diplomatic success and put up with the Serbian reply. But this hint was not given. On the contrary, we pressed for war. . . . We rejected the British proposals of mediation . . . and Count Berchtold was even ready to satisfy himself with the Serbian reply. . . . . In view of these indisputable facts, it is not surprising that the whole civilized world outside Germany attributes to us the sole guilt for the world war.» These words of the former German ambassador in London have been amply corroborated during and since the war by the numerous revelations which emanated from highly authoritative German sources.

As a preliminary to the resumed conversations Sir Edward Grey suggested

"that, in the event of this mistrust preventing a solution being found by Vienna and Saint Petersburg, Germany might sound Vienna, and I would undertake to sound Saint Petersburg, whether it would be possible for the four disinterested Powers to offer to Austria that they would undertake to see that she obtained full satisfaction of her demands on Serbia, provided that they did not impair Serbian sovereignty and territorial integrity. . . . Austria has already declared her willingness to respect them. Russia might be informed by the four Powers that they would undertake to prevent Austrian demands going the length of impairing Serbian sovereignty and integrity. All the Powers would of course suspend further military operations and preparations."

In reply to this proposal the German foreign minister assured the British ambassador that both the kaiser, at the request of the tsar, and the German Foreign Office had been urging Austria to show willingness to continue discussions. Reports from Vienna, he said, had been of a promising nature — but Russia's mobilization had spoiled everything. On 31 July, while negotiations between Austria and Russia were in progress, Sir Edward Grey told Prince Lichnowsky that if Germany could get any reasonable proposal put forward which would make

it clear that Germany and Austria were striving to preserve European peace, he would support it at Saint Petersburg and Paris. He further assured the prince that, if Russia and France unreasonably rejected such a proposal, "His Majesty's Government would have nothing more to do with the consequences." During the day Sir Edward received two dispatches, one from Saint Petersburg, announcing that general mobilization had been ordered "in consequence of report received from the Russian ambassador in Vienna to the effect that Austria is determined not to yield to intervention of the Powers, and that she is moving troops against Russia as well as against Serbia. Russia has also reason to believe that Germany is making active military preparations, and she cannot afford to let her get a start." The other message, from Berlin, confirmed the Russian mobilization and announced that a state of *Kriegsgefahr* (Imminence of War) would be proclaimed at once. According to the chancellor, "it could only be against Germany that Russian general mobilization was directed." So far, Germany had not been involved in the dispute, which rested primarily between Austria and Russia.

Realizing that the prospects of a peaceful solution were growing more remote every hour, Sir Edward returned to the problem of Belgium. Cabling to the British ambassadors at Berlin and Paris, he expressed a hope that the situation was not irretrievable, but that in view of a prospect of a mobilization in Germany it became essential to the British government, in view of existing treaties, to ask whether France and Germany each were prepared to respect the neutrality of Belgium so long as no other power violated it. In a note to Brussels he assumed "that the Belgian government will maintain to the utmost of their power their neutrality, which I desire and expect other powers to uphold and observe." France immediately promised to respect that neutrality; Germany made no direct reply. Four days later, on 4 August, Prince Lichnowsky was instructed to assure the British government that, "even in the case of armed conflict with Belgium, Germany will, under no pretense whatever, annex Belgian territory"; that the German army could not be exposed to French attack across Belgium, "which was planned according to absolutely unimpeachable information," and that "Germany had consequently to disregard Belgian neutrality, it being for her a question of life or death to prevent French advance." (German troops had entered Belgium on that day). On 1 August Prince Lichnowsky asked Sir Edward Grey whether, if Germany gave a promise not to violate the neutrality of Belgium, England would engage to remain neutral. Sir Edward replied that he could not give such a promise; that the attitude of Great Britain would be determined largely by public opinion, to which the neutrality of Belgium would appeal very strongly. The prince then pressed Sir Edward to formulate conditions on which England would remain neutral, and "even suggested that the integrity of France and her colonies might be guaranteed." The British minister "felt obliged to refuse definitely any promise to remain neutral on similar terms," and said that England must "keep her hands free." On the same day the British minister at Brussels reported that "Belgium expects and desires that other Powers will observe and uphold her neutrality, which she intends to maintain to the utmost of her power."

On 31 July Germany suddenly dispatched an ultimatum to Russia demanding that she should countermand her mobilization within 12 hours; the time limit to expire at 11 o'clock the next day. The British ambassador in Paris announced that the German embassy there was packing up. Late in the evening the French government advised their representative in London that German army corps from Metz, Cologne, Trèves and Strassburg had been moved close to the frontier and that German patrols had already entered French territory. It must be borne in mind that at this time Austria and Russia were engaged in negotiations, for on 1 August Sir Edward Grey wired to Sir E. Goschen in Berlin,

> "I still believe that it might be possible to secure peace if only a little respite in time can be gained before any Great Power begins war. The Russian Government has communicated to me the readiness of Austria to discuss with Russia . . . and to accept a basis of mediation which is not open to the objections raised in regard to the formula which Russia originally suggested. Things ought not to be hopeless so long as Austria and Russia are ready to converse, and I hope that the German Government may be able to make use of the Russian communications referred to above, in order to avoid tension. His Majesty's Government [British] are carefully abstaining from any act which may precipitate matters."

On presenting this note to the German Secretary of State, Sir E. Goschen "spent a long time arguing with him that the chief dispute was between Austria and Russia, and that Germany was only drawn in as Austria's ally. If, therefore, Austria and Russia were, as was evident, ready to discuss matters and Germany did not desire war on her own account, it seemed to me [Sir E. Goschen] only logical that Germany should hold her hand and continue to work for a peaceful settlement." In reply, the minister attributed Austria's acquiescence to German influence at Vienna, and that all would have been well had not Russia mobilized against Germany. But Russia by abstaining from answering Germany's demand that she should demobilize, had caused Germany to mobilize also, and that Germany must regard the refusal to answer as "creating a state of war." Here it is apposite to quote from the Paris *Matin* of 5 Feb. 1919, which published a statement made by the former Italian premier, Signor Salandra, to the effect that after Austria had begun hostilities against Serbia and had found that Russia was mobilizing, Count Berchtold hesitated and wanted to turn back, but that "Germany intervened and obliged her ally to continue the war."

During the time from 29 to 31 July an exchange of telegrams took place between the kaiser, the tsar and King George. The kaiser drew the attention of the tsar to the menacing character of the Russian mobilization and to the continuance of his own activity in the direction of mediation. The tsar responded on the 31st, thanked the kaiser, and pointed out that it was technically impossible to discontinue mobilization, which had been rendered necessary by Austria's action. The tsar promised that his troops would undertake no provocative action so long as the negotiations with Austria continued. The German Emperor replied that the responsibility for the safety of his kingdom

(Prussia) compelled him to take retaliatory measures. "My efforts to maintain the peace of the world have now reached their utmost possible limit," said the kaiser, declaring that it lay with the tsar to avoid war by ordering cessation of military measures. The tsar's suggestion to submit the Austro-Serbian quarrel to The Hague Tribunal went unanswered. The kaiser also telegraphed to King George an outline of his communications to the tsar, who replied with a personal appeal to the emperor "to leave still open grounds for negotiation and possible peace." In one dispatch to the tsar the German Emperor declared that "the proposals made by the German government in Vienna were conceived entirely on the lines suggested by Great Britain, and the German government recommended them in Vienna for their serious consideration." This statement seems to indicate that Germany, while offering no suggestion of her own, apparently considered the British proposals as sufficiently satisfactory for Austria to accept — if they were intended to be accepted. "Owing to the action of Russia," reads the kaiser's message, "the Austrian answer . . . was not given." It may be left to future historians to speculate on the problem, if it promised a solution of the difficulty, why that answer was not given. According to the German 'White Book' Russian troops are said to have crossed the frontier the same afternoon that the tsar's telegram was sent. This publication bore the subhead, "How Russia and her Ruler betrayed Germany's Confidence and thereby made the European War." The first Russian troops entered German territory on 3 August, three days after the declaration of war by Germany.

Meanwhile, in the evening of 31 July, the German ambassador in Paris called on the French foreign minister, informed him of the ultimatum that had been sent to Russia, and said that he would return at 1 P.M. on the following day to learn what attitude the French government proposed to adopt in the circumstances. He returned next morning and was told that the French government failed to comprehend the reason prompting his communication of the previous evening. It was pointed out to him that general mobilization in Russia had not been ordered until after Austria had decreed a general mobilization and that the Russian government was ready to demobilize if all powers did likewise. "It seemed strange to the French government that in view of this and of the fact that Russia and Austria were ready to converse, the German government should have at that moment presented an ultimatum at Saint Petersburg requiring immediate demobilization by Russia. There was no difference between France and Germany, but the German ambassador had made a menacing communication to the French and had requested an answer the next day, intimating that he would have to break off relations and leave Paris if the reply was not satisfactory." The ambassador stated "that he had packed up." Later in the day he received his answer, namely, that the French Republic "would be forced to consult her own interests." The German ambassador then announced to the French premier that a state of war existed between Germany and France. At 3.40 P.M. (1 August) a general mobilization of the French army was ordered. The troops nearest the German frontier were ordered to leave a zone of 10 kilometers between themselves and the German boundary line, in order to avoid a collision. On the same day German troops entered Luxembourg.

In the morning the British Cabinet held a meeting and after its close Sir Edward Grey gave the French ambassador, M. Paul Cambon, an assurance that if the German fleet came into the Channel or through the North Sea to undertake hostile operations against French coasts or shipping, the British fleet would give all the protection in its power. This assurance was given subject to the policy of the government receiving the support of Parliament and was not to be taken as binding the government to take any action until the contingency of action by the German fleet took place. On 3 August Germany demanded permission from Belgium to send troops through that country on the pretext that this proceeding would help Belgium to prevent the violation of her territory. Berlin was, of course, well aware that France had already solemnly promised to respect the neutrality of Belgium. About the time the German ambassador in Paris was carrying out his instructions, M. Sazonov was expressing his gratitude to the British government, "which had done so much to save the situation," and that "it would be largely due to them if war were prevented." Even at this late hour, when Russia, France and Germany were already technically at war, there were indications of Austrian wavering. Acting on instructions from Count Berchtold, the Austrian ambassador in Paris assured the French foreign minister that there was no intention on the part of Austria to impair the sovereignty or territorial rights of Serbia. Simultaneously, the Russian ambassador in Vienna was "begged" by Count Berchtold to do his best to remove the wholly erroneous impression in Saint Petersburg that the "door had been banged" by Austria on all further conversations. Special attention was drawn to the fact that the conversations "had not been broken off by Austria-Hungary." This naturally gives rise to the question, If negotiations had not been broken off by either of the two principal disputants, who did break them off? As M. Sazonov described the situation, "Germany was unfortunate in her representatives in Vienna [the late Herr von Tschirschky] and at Saint Petersburg [Count Pourtalès]"; the former was "a violent Russophobe who had urged Austria on," and the latter had represented to his government that "Russia would never go to war." He (M. Sazonov) "had accepted every proposal that had been held out to him. He had accepted the proposal for a conference of four, for mediation by Great Britain and Italy, for direct conversation between Austria and Russia; but Germany and Austria had either rendered these attempts for peace ineffective by evasive replies or had refused them altogether."

A time limit of 12 hours was attached to the German ultimatum to Belgium, with a threat, in case of refusal to permit the passage of German troops, to treat Belgium as an enemy. Without hesitation the Belgian government answered that an attack upon their neutrality would be a flagrant violation of the rights of nations, and that to accept the German proposal would be

to sacrifice the honor of a nation. "Conscious of its duty, Belgium is firmly resolved to repel aggression by all possible means." During the day the French ambassador in London asked Sir Edward Grey what England would say about Belgian neutrality. The minister replied that the violation of Belgium was a more important matter than the Luxembourg raid, and added, "we are considering what statement we should make in Parliament tomorrow — in effect, whether we should declare violation of Belgian neutrality to be a *casus belli*." The French government offered the support of five French army corps to the Belgian government. The latter replied (3 August): "We are sincerely grateful to the French government for offering eventual support. In the circumstances, however, we do not propose to appeal to the guarantee of the Powers."

Meanwhile, what was the attitude of Italy, a partner of Germany and Austria in the Triple Alliance? The full conditions of that alliance were never made public till October 1919. Contrary to general belief, the treaty contained no detailed military provisions; its spirit being purely defensive in case of an unprovoked attack upon any one of the partners. It was definitely laid down, however, that Italy was not expected to come to the aid of Germany in a war with Russia, while in 1896 Italy had notified her partners that she would not join them in any war in which France and England were aligned on the same side against the Central Powers. Furthermore, Italy was not to be called upon to fight against England. (New York *Times*, 24 Oct. 1919). Italy's attitude in the great crisis is explained in the following message from Sir Edward Grey to the British ambassador in Paris on 3 Aug. 1914: "The French ambassador made the following communication: 'In reply to the German Government's intimation of the fact that ultimatums had been presented to France and Russia, and to the question as to what were the intentions of Italy, the Marquis di San Giuliano [Italian Foreign Minister, d. 16 Oct. 1914], replied that the war undertaken by Austria, and the consequences which might result, had, in the words of the German ambassador himself, an aggressive object. Both were therefore in conflict with the purely defensive character of the Triple Alliance, and in such circumstances Italy would remain neutral.' In making this communication, M. Cambon was instructed to lay stress upon the Italian declaration that the present war was not a defensive but an aggressive war, and that, for this reason, the *casus fœderis* under the terms of the Triple Alliance did not arise." On the news of the German declaration of war reaching England, all the naval reserves were called out and a partial *moratorium* was proclaimed in order to avert a financial crisis.

German troops invaded Belgium on 3 August, when the king of the Belgians telegraphed to King George: "Remembering the numerous proofs of your Majesty's friendship and that of your predecessor and the friendly attitude of England in 1870 and the proof of friendship you have just given us again, I make a supreme appeal to the diplomatic intervention of your Majesty's Government to safeguard the integrity of Belgium." Sir Edward Grey immediately instructed the British ambassador in Berlin to protest against the violation of a treaty to which Germany, in common with England, was a party, and to request an assurance that the demand made upon Belgium would not be proceeded with and that her neutrality would be respected. Next morning (4 August), however, the German minister in Brussels handed the Belgian foreign minister a note to the effect that as the Belgian government had declined the well-intentioned proposals submitted to them by the Imperial government the latter would, deeply to their regret, be compelled to carry out, if necessary by force of arms, the measures considered indispensable in view of the French menaces. A state of war now existed also between France and Germany, for on the evening of 3 August the German ambassador in Paris had handed the following document to the French premier: "The German military and administrative authorities have ascertained that a number of hostile acts have been committed on German territory by French military aviators. Some of the latter have violated the neutrality of Belgium, invading its territory. [Here follow some fictitious details of alleged attacks on Nüremberg, etc.]. I am directed and have the honor to inform your Excellency that in consequence of these aggressions the German Empire considers itself at war with France, due to the acts of this latter power." An interesting sequel to the German charges came to light 22 months later. In June 1916, Professor Schwalde, editor-in-chief of the German *Weekly Review of Medicine*, published in that periodical: "It is false that French aviators threw any bombs on Nüremberg on 2 Aug. 1914. The Mayor of the city recently wrote to the general commanding the Third Bavarian Army Corps that he never had any knowledge of any bombardment of the stations of Nüremberg, Kissingen, or of Nüremberg-Ansbach before or after the declaration of the war."

To return to 4 Aug. 1914. Germany made one more attempt, through her ambassador in London, to dispel any mistrust that might subsist on the part of the British government with regard to German intentions, by repeating most positively the assurance that, even in the case of armed conflict with Belgium, Germany would under no pretense whatever annex Belgian territory. "Please impress upon Sir Edward Grey that the German Army could not be exposed to French attack across Belgium, which was planned according to unimpeachable information. Germany has consequently to disregard Belgian neutrality, it being for her a question of life or death to prevent a French advance." Simultaneously, Brussels announced that German troops had entered Belgian territory, and that Liége had been summoned to surrender by a small party of Germans who, however, were repulsed. The die was cast. Sir Edward Grey now instructed the British ambassador in Berlin to say that a satisfactory reply to his telegram was expected in London by midnight. "If not, you are . . . to ask for your passports, and to say that His Majesty's Government feel bound to take all steps in their power to uphold the neutrality of Belgium and the observance of a treaty to which Germany is as much a party as ourselves." Sir Edward Goschen delivered this message to Herr von Jagow, who at once replied that he was

sorry to say that his answer must be "No," as German troops having crossed the frontier that morning. Belgian neutrality was already violated. The foreign minister explained that Germany had been obliged to take this step as she had to advance into France by the quickest and easiest route, so as to be able to get well ahead with her operations and endeavor to strike some decisive blow as early as possible. By adopting the more southern route they could not hope, in view of the paucity of roads and the strength of the fortresses, to get through without formidable opposition entailing great loss of time. Rapidity of action was the great German asset, while that of Russia was an inexhaustible supply of troops. Sir Edward Goschen pointed out that this accomplished violation of Belgium rendered the situation exceedingly grave, and asked whether there was not still time to draw back and avoid possible consequences. The minister replied that it was impossible for Germany to draw back. At a later interview in the evening the British ambassador again asked the same question and received the same answer, namely, that it was too late. Sir Edward Goschen then called upon the German chancellor and found him "very agitated." The chancellor "at once began a harangue, which lasted about 20 minutes." He said that the step taken by the British government was terrible to a degree; just for a word — "neutrality," a word which in war time had so often been disregarded — just for "a scrap of paper" Great Britain was going to make war on a kindred nation who desired nothing better than to be friends with her. All his efforts in that direction had been rendered useless by this last terrible step, and the policy to which he had devoted himself since his accession to office had tumbled down like a house of cards. What England had done, he said, was "unthinkable"; it was "like striking a man from behind while he was fighting for his life against two assailants." He also held Great Britain responsible for all the terrible events that might happen.

The British ambassador protested strongly against that statement and said that, just as it was considered a matter of life or death for Germany to violate Belgian neutrality for strategical reasons, so was it also a matter of life and death for the honor of Great Britain that she should keep her solemn engagement to do her utmost to defend Belgium's neutrality if attacked. That solemn compact simply had to be kept, or what confidence could anyone have in engagements given by Great Britain in the future? The chancellor said, "But at what price will that compact have been kept. . . . Has the British Government thought of that?" The ambassador hinted that fear of consequences could hardly be regarded as an excuse for breaking solemn engagements, but "his Excellency was so excited, so evidently overcome by the news of our action, and so little disposed to hear reason, that I refrained from adding fuel to the flame by further argument. As I was leaving he said that the blow of Great Britain joining Germany's enemies was all the greater, that almost up to the last moment he and his Government had been working with us and supporting our efforts to maintain peace between Austria and Russia. I said that this was part of the tragedy which saw the two nations fall apart just at the moment when the relations between them had been more friendly and cordial than they had been for years. Unfortunately, notwithstanding our efforts to maintain peace between Russia and Austria, the war had spread and had brought us face to face with a situation which, if we held to our engagements, we could not possibly avoid. . . ."

About 9 P.M. Sir Edward Goschen dispatched a telegraphic report of the interview, but the message never reached the Foreign Office in London. At 9.30 the German Under-Secretary of State called on the ambassador and expressed his deep regret that the very friendly official and personal relations between them were about to cease. He also "casually" asked whether a demand for passports was equivalent to a declaration of war. Sir Edward Goschen replied that there were many cases where diplomatic relations had been broken off and, nevertheless, war had not ensued; but that in the present case the British government expected an answer to a definite question by 12 o'clock that night, and that in default of a satisfactory answer they would be forced to take such steps as their engagements required. The German official said it was, in fact, a declaration of war, as the Imperial government could not possibly give the assurance required either that night or any other night.

Not long after the minister had departed, Berlin was startled by a flying sheet, issued by the *Tageblatt,* stating that Great Britain had declared war on Germany. The immediate result of this news was the assemblage of an excited and unruly crowd before the British embassy. The small force of police which had been sent to guard the embassy was soon overpowered, and the attitude of the mob became more threatening. "We took no notice of this demonstration so long as it was confined to noise, but when the crash of glass and the landing of cobble stones into the drawing-room, where we all were sitting, warned us that the situation was getting unpleasant, I telephoned to the Foreign Office an account of what was happening. Herr von Jagow at once informed the chief of police, and an adequate force of mounted police, sent with great promptness, very soon cleared the street. From that moment on we were well guarded, and no more direct unpleasantness occurred." After order had been restored Herr von Jagow called at the embassy and expressed his regrets. He said that the behavior of his countrymen had made him feel more ashamed than he had words to express. "It was an indelible stain on the reputation of Berlin."

Next morning (5 August) the kaiser sent an aide-de-camp with the following message: "The Emperor has charged me to express to your Excellency his regret for the occurrences of last night, but to tell you at the same time that you will gather from these occurrences an idea of the feelings of his people respecting the action of Great Britain in joining with other nations against her old allies of Waterloo. His Majesty also begs that you will tell the King that he has been proud of the titles of British field-marshal and British admiral, but that in consequence of what has occurred he must now at once divest himself of those titles." In his report on the incident Sir Edward Goschen stated that the above message "lost

none of its acerbity by the manner of its delivery.» At 11 A.M. the British ambassador was handed his passports, and the last thread between England and Germany was broken. Sir Edward Goschen paid a glowing tribute to the great assistance rendered «to us all» by the American ambassador, Mr. Gerard, and his staff. «Undeterred by the hooting and hisses with which he was often greeted by the mob on entering and leaving the Embassy, his Excellency came repeatedly to see me to ask how he could help us and to make arrangements for the safety of stranded British subjects. He extricated many of these from extremely difficult situations at some personal risk to himself, and his calmness and *savoir-faire* and his firmness in dealing with the Imperial authorities gave full assurance that the protection of British subjects and interests could not have been left in more efficient hands.»

At this particular stage (5 Aug. 1914) the European situation presented a strange mosaic of international complications. Austria was at war with Serbia, but not with Russia; nor with France and England. Germany was at war with Russia, France, England and Belgium, but not with Serbia; Italy had declared her neutrality. While German troops were already operating in France and Belgium, Russia still abstained from attacking Austria. The Russian ambassador had been instructed to remain at his post in Vienna till war should be actually declared by Austria. This only happened on the 6th, when Count Berchtold informed the foreign missions in Vienna that the Austrian ambassador at Saint Petersburg had been instructed to notify the Russian government that, in view of the menacing attitude of Russia in the Austro-Serbian conflict and the fact that Russia had commenced hostilities against Germany, Austria considered herself also at war with Russia. On the 10th, France declared war on Austria, and on the 12th Great Britain followed suit. The participation of Japan in the war was due partly to considerations of policy based upon her alliance with Great Britain, who asked her (in August 1914) to safeguard their joint interests in the Far East, and partly to an unforgotten incident that happened nearly 20 years before. In 1894-95 Japan had defeated China in war and had failed to get satisfaction commensurate with her victory owing to the diplomatic intervention of Russia and Germany. (See HISTORICAL INTRODUCTION in this department). Japan had wiped off her score with Russia 10 years later in a great war, and after another decade the opportunity was offered her of settling with Germany. But while grievances sometimes rankle in the minds of nations for many years, they are not often seized upon as a pretext for war. Since 1902 Japan had been an ally of Great Britain. The treaty existing between the two countries had been renewed in 1905 and revised in 1911. Its provisions were operative only in the Far East and covered the maintenance of general peace in Eastern Asia and India, the preservation and integrity of China, and the principle of equal opportunities for the commerce and industry of all nations in China, besides the maintenance of the territorial rights and defense of the special interests of the contracting parties in Eastern Asia and India. It was also provided that «if by reason of unprovoked attack or aggressive action, wherever arising, on the part of any other power or powers, either party should be involved in war in defense of its territorial rights or special interests, the other party will at once come to the assistance of its ally, and will conduct the war in common, and make peace in mutual agreement with it.» A new article was added in 1911 to the effect that «should either high contracting party conclude a treaty of general arbitration with a third power, it is agreed that nothing in this agreement shall entail upon such contracting party an obligation to go to war with the power with whom such treaty of arbitration is in force.» This proviso presumably had specially in view the Anglo-American unlimited Arbitration Treaty signed in 1911, but not subsequently ratified by the United States Senate. On 15 Aug. 1914 Japan delivered an ultimatum to Germany demanding (1) an immediate withdrawal of all German armed vessels from Japanese and Chinese waters, and (2) the unconditional delivery of the leased territory of Kiao-chau at a date not later than 23 August, at noon, in order that it might be restored to China. As no answer was received by the specified time, Japan promptly declared war on that day and proceeded at once to active hostilities against the German forces stationed on the Tsing-tau Peninsula. In 1914 Japan possessed twice the naval and military strength which she had when she began the war with Russia in 1904. The wheel of fate had come full circle with a vengeance. The participation of Turkey in the war on the side of Germany and Austria-Hungary was the consummation of a process that had been in operation for many years. Germany began to take a more than platonic interest in the decadent Turkish Empire not long after the signing of the Berlin Treaty in 1878. A German military mission under General von der Goltz was sent to Turkey to assist in reorganizing the Turkish army and a group of German financiers began to apply for railway concessions. The kaiser visited the sultan in 1889, and not long afterward the plan of a German railroad through Turkish territory to the Persian Gulf began to assume shape. In 1898 the kaiser again visited Constantinople and this time made a spectacular tour of the Holy Land, proclaiming himself under all circumstances the friend of the 300,000,000 Mohammedans in the world. Both Germany and Austria-Hungary had a «Drang nach Osten» or «push toward the east» policy in view, the former seeking an outlet from her geographically encircled position and the latter a predominance in the Balkans. The situation was well explained by the Frankfurter *Zeitung* a few months before the outbreak of the European War, on 7 Jan. 1914: «A war with England, France and Russia at the time appears, fortunately, to be ever more improbable, but the possibility of such a conflict cannot be excluded . . . The Triple Alliance countries [Germany, Austria and Italy], which are compelled to have recourse to large armies, cannot hope to compete successfully with the fleets of England and France on the high seas . . . Where, then, shall the Triple Alliance countries look for their raw material if their sea routes are cut off? There is only one means of land communication, and it leads through Rumania,

Bulgaria and Turkey into Asia Minor . . . The states lying on the eastern border of Hungary and Asia Minor have, indeed, no choice: They must be the friends and allies of the Triple Alliance, or they must reckon with the unflinching hostility of the Triple Alliance in any conflict which threatens their independence. Austria, too, has no choice. Either the countries on the Lower Danube must be her friends, or she must exterminate them . . . The German military mission in Constantinople is not merely helping to reorganize the Turkish army out of pure joy . . . Bismarck could not have foreseen that this territory would one day become so essential a route for German imports that we should not, if necessary, shrink from a conflict with Russia to maintain our freedom of trade there." Thus those Balkan states which did not fall in with the plan would have to be exterminated. By an agreement in 1894 Rumania was linked to Austria; Bulgaria was evidently regarded as "safe," while Serbia remained the sole obstacle. During the first month of the European War Turkey maintained an uneasy neutrality. The escape of the *Goeben* and *Breslau* into the Dardanelles hastened matters. German men, gold and arms were sent to Turkey through Bulgaria and Gen. Liman von Sanders became a high official in the Turkish army. The army was mobilized and large quantities of war stores were dispatched to Bagdad and Syria; the Dardanelles forts were strengthened and an approaching *Jehad* (holy war) was preached by German agents. The kaiser was represented as a convert to Islam and stories were circulated of Mohammedan uprisings in British, Russian and French territories. Egypt was believed to be ready to revolt, and the khedive's sympathies had already been secured. The sultan, a mere figurehead, and his grand vizier and finance minister were opposed to war, while the Turkish people were by no means hostile to the Allies. Directly after declaring war against Germany, Great Britain took over two Turkish battleships then in course of construction in England, which had been ordered by the Turkish government. These vessels, the *Sultan Osman* and *Reshadieh*, were renamed *Agincourt* and *Erin* and were added to the British navy. The Turkish people were offended at this action, but they had little regard for the Young Turk Party ruled by Talaat Bey and Enver Bey. It was announced that the *Goeben* and *Breslau* had been purchased by Turkey to replace the other two vessels, but it soon became evident that the German ships, while flying the Turkish flag, were commanded and manned by Germans. They were repaired under German direction and made cruises in the Black Sea. The Allies protested against this procedure when Turkey suddenly denounced the capitulations under which European residents in Turkey had always enjoyed extra-territorial rights (9 Sept. 1914). Finally, on 29 October, the *Breslau* and some Turkish war craft appeared off the Crimea and bombarded Theodosia and Novorossisk at the entrance to the Sea of Azov, both unfortified towns. The Allied ambassadors in Constantinople had their telegraphic communications cut off and could not get in touch with their governments. A Turkish squadron shelled Odessa on 30 October and the *Goeben* bombarded Sevastopol on 2 November, although Turkey was still at peace with Russia. The Turkish ambassadors in London and Paris stated that their government was acting under duress, that the German guns had been turned upon Constantinople, and that an apology would be forthcoming. On 3 November a joint British and French squadron bombarded the entrance forts of the Dardanelles, and two days later Great Britain declared war on Turkey, simultaneously annexing Cyprus. The khedive of Egypt, Abbas Hilmi II (q.v.), was at the time in Constantinople plotting with the Turks and Germans to oust the British; whereupon the latter deposed him, proclaimed Egypt a British protectorate, and appointed his uncle, Hussein Kamil, sultan. Russia, meanwhile, invaded Asia Minor from the Caucasus. According to the Greek 'White Book' laid before the Greek Chamber on 18 Aug. 1917, M. Theotokis, Greek minister at Berlin, telegraphed to Athens from Berlin the day Great Britain declared war against Germany (4 Aug. 1914): "The Emperor informs me that an Alliance has to-day been concluded between Germany and Turkey. Bulgaria and Rumania are also taking their stand alongside of Germany . . . The Emperor added, 'What I ask to-day is the execution of what the two sovereigns [of Germany and Greece] have often discussed.'" Italy came in against Austria on 23 May 1915, and Bulgaria against Serbia on 14 October of the same year. On 19 Oct. 1915 Italy declared war on Bulgaria. In March 1916 Portugal precipitated a crisis with Germany by seizing 36 Austrian and German ships in the Tagus, and on the 9th of the month Germany issued a declaration of war. See GREAT BRITAIN AND THE WORLD WAR; FRANCE AND THE WAR; GERMANY AND THE WAR; ITALY AND THE WORLD WAR; UNITED STATES AND THE EUROPEAN WAR; WAR, EUROPEAN — AMERICAN NEUTRALITY, etc.

HENRI F. KLEIN,
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3. CHRONOLOGICAL SURVEY OF THE WAR. The following tables present a chronological outline of the more important international events preceding the war, and also of the principal occurrences during the progress of the war. The seeds of the present lie in the past; economics, geography, ideals and aspirations shape the bent of history; the public utterances of leaders of thought and action reveal the trend of events and illumine the converging paths of causes and effects.

The tables are divided into

1. Pre-War Events.
2. Declarations of War.
3. Western Front.
4. Eastern Front.
5. Southern Front.
6. Naval Operations.
7. Colonial Campaigns.
8. Rulers and Principal Statesmen.

1. PRE-WAR EVENTS.

1870

July 19.— Franco-German war begins.
Dec. 10.— German Empire proclaimed.

1871

Jan. 18.— First German Emperor proclaimed.
May 10.— Peace of Frankfort; France loses Alsace and part of Lorraine.

1875

May 6.— London *Times* reveals (through Blowitz) German plan to attack France: "England, the guarantor of Belgian neutrality, will not have Belgium touched . . . Belgium will not be touched and England will remain quiet." Intervention of Tsar Alexander II and Queen Victoria.

1878

July — Treaty of Berlin.

1879

Austro-German alliance.

1880

German colonial expansion begins.

1882

Triple Alliance formed.

1884

Professor Treitschke, in 'Deutschlands Kaempfe': "We have reckoned with France and Austria. The reckoning with England has still to come; it will be the longest and most difficult."

1886

Pan-German League founded.

1888

June 15.— Accession of William II as King of Prussia and German Emperor.

1889

May 14.— Emperor declares: "For me, every social democrat is synonymous with enemy of the nation and of the fatherland."

1890

March — German Emperor declares at Bremen: "It is a tradition in our house [Hohenzollern] that we regard ourselves as chosen by God to govern and guide the people . . . We Germans fear God and nothing else in the world."

" 18.— Fall of Bismarck.

June 17.— Great Britain cedes Heligoland to Germany.

1895

April — End of Chino-Japanese War. German intervention. Marquis Ito tells Mr. (Sir Valentine) Chirol, "Japan will never forgive Germany."

1896

Jan. 3.— German Emperor's telegram to President Kruger.

1897

June 18.— German Emperor declares at Cologne: "That trident [of Neptune] must be in our fist."

Dec. 16.— German Emperor orders his brother to employ the "mailed fist" in China.

1898

April 19.— Spanish-American War.

May — Incident in Manila Bay between Admiral Dewey and the German Admiral von Diederich; British squadron under Captain Chichester interposed. At Birmingham, Joseph Chamberlain, British Colonial Secretary, advocates Anglo-American alliance. German Navy League formed. Thayer's 'Life of John Hay' (New York 1915) quotes German Emperor: "If I had had a larger fleet I would have taken Uncle Sam by the scruff of the neck."

Aug. 23.— Tsar Nicholas II issues Peace Manifesto.

Sept. 23.— German Emperor declares at Stettin: "Our future lies upon the water."

Oct. — Anglo-French crisis over Fashoda.

Dec. 10.— End of Spanish-American War.

1899

Feb. 26.— Prince Radziwill, representing the kaiser at the funeral of Félix Faure in Paris, says: "There is the United States, whose pretensions and riches are becoming a danger for us all."

March 9.— British First Lord of the Admiralty (Goschen) suggests limitation of navies.

May 18.— First Peace Conference at The Hague.

Oct. 11.— South African War begins; outbreak of German Anglophobia.

" 18.— German Emperor declares at Hamburg: "Germany is in bitter need of a strong fleet."

Nov. 9.— Lord Salisbury, British Premier and Foreign Minister, describes Germany as "That one of the Continental States with which we have for many years entertained relations of sympathy and friendship beyond all others."

" 30.— Chamberlain advocates alliance between Great Britain, United States and Germany.

1900

Jan. — Prof. Hans Delbrück in *North American Review:* "So the German nation . . . has now directed its hate against England. England must have no illusions on this point . . . The experience of history shows that in the long run monarchies have always overpowered democracies . . . The House of Hohenzollern never can be separated from the fortune of the nation."

Feb. 8.— Introduction of new German Navy Bill with hostile preamble. Fleet to be doubled. Admiral von der Goltz declares: "Our chances of success in a war against England grow more favorable every day."

March — Sir R. Blennerhassett in the London *National Review:* "But the true reason why an increase of the [German] navy is supported by ministers and politicians is to prepare for a struggle with England."

April — German Emperor's message to *Daily Express* (London): "Tell the British people that my first hope, now and always, is the preservation of international peace; my second, the consolidation and maintenance of good relations between Germany and Great Britain."

July 5.— German Emperor at Kiel: "The ocean is indispensable for Germany's greatness, but the ocean also reminds us that neither on it nor across it in the distance can any great decision be again consummated without Germany and the German Emperor."

Sept. — L. J. Maxse (editor) in *National Review* (London): "Germany . . . has secured her position as the first military power in Europe by smashing Austria and France in turn. She has now turned her attention seawards, and is bent on becoming the first naval power. England stands in her way, and therefore must be smashed."

Oct. 18.— Count von (Prince) Bülow becomes Imperial German Chancellor.

Nov. 12.— Lord Landsdowne becomes British Foreign Minister.

1901

Jan. 22.— Death of Queen Victoria; accession of Edward VII.

1902

Jan. 30.— Anglo-Japanese Treaty of Alliance.

Feb. — German vice-admiral, Livonius, on 'The German North Sea Fleet and British Sea Power' in *Deutsche Revue*, declares that British naval supremacy was established in spite of inferior numbers and that "a superiority on the part of Great Britain [in tactics and training] cannot any longer be discovered; on the contrary, we may boldly accord this superiority to ourselves."

Feb. 23.— Prince Henry of Prussia arrives in New York.

May — A German squadron under Prince Henry of Prussia — by permission of the British Admiralty — visits naval bases and harbors in Irish waters.

" 31.— End of South African War.

June — Sir Rowland Blennerhassett, in *National Review:* "The desire to overthrow the British Empire, and to substitute for it a great German dominion, was quite as strong in the days of Mr. Gladstone as it is at the present moment."

" 19.— German Emperor at Aix: "No thought is born of science which is not first utilized by us in order later to be taken over by other nations."

June 28.— Triple Alliance renewed.
July — "The conclusion is irresistible that the Kaiser is either the powerless friend or the secret enemy of England." Maxse, in *National Review*.
" 11.— Mr. Balfour succeeds Lord Salisbury as Premier.
Dec. — *Berliner Tageblatt* says: "The views of the English Press, although we would not deny that they are of a certain importance, are known to be the opposite of the views of the English government and also of the Admiralty. The latter knows very well that the creation of an English North Sea Fleet is, on the one hand, politically unnecessary, and at the same time false policy, and, on the other hand, an open sign of hostile intentions against Germany."

1903

Feb. — Sir R. Blennerhassett: "The virulent hostility of Germany to England is the work of Prussia. The ultimate object of Prussian policy is the overthrow of the British Empire. The highest authority in the fatherland has told us that the trident ought to be in the hands of Germany. It must therefore be forced from the grasp of England." (*National Review*).
May 1.— King Edward in Paris; inception of the "Entente Cordiale."

1904

Feb. 8.— Russo-Japanese War begins.
April 8.— Anglo-French Agreement signed.
July 12.— Anglo-German arbitration treaty.
Sept. — "It is impossible for Great Britain to be on equally good terms with France and Germany. Any attempt to become so will result in making enemies of both." (*National Review*).
Dec. — Ratification of the Anglo-French Agreement by the French Parliament.

1905

March 22.— German Emperor at Bremen: "God has called us to civilize the world: we are the missionaries of human progress. . . . We are the salt of the earth."
" 31.— German Emperor at Tangier.
June 6.— Fall of M. Delcassé, French Foreign Minister; German intimidation of France.
Aug. 8.— New Anglo-Japanese Agreement. French Fleet visits England.
Sept. 5 — Peace of Portsmouth (N. H.); end of Russo-Japanese War.
Dec. 5.— Resignation of Balfour Ministry.

1906

Jan. — General election in Great Britain; overwhelming victory of Liberal-Radicals; Campbell-Bannerman premier.
" 16.— Algeciras Conference opens; Great Britain supports France.
Aug. 15.— King Edward and German Emperor meet at Kronberg. Kaiser describes approaching Hague Conference to Sir Charles (now Lord) Hardinge as "great nonsense."
Sept. — German Emperor informs Mr. (Lord) Haldane that Germany would not entertain disarmament proposals.

1907

"The Germans are afflicted with the severest attack of swelled-headedness known to modern history. The British are practically ignorant of this dangerous state of mind in their greatest rivals." Dr. Emil Reich, a Hungarian, in 'Germany's Swelled Head' (London); reprinted as 'Germany's Madness' (New York 1914).

June 15 — Second Peace Conference opens at The Hague.
Aug. — Herr Bebel, leader of German Socialists, at the Socialist Congress in Stuttgart: "If it is the aim of the Imperial government to make Germany the most powerful empire in Europe, and Prussia the most powerful state in that empire, they may be sure of my support."
" 31.— Anglo-Russian Agreement signed, completing the Triple Entente.
Sept. 1.— German Emperor at Münster: "The German people will be the block of granite on which our Lord will be able to elevate and achieve the civilization of the world."
Nov. — Great German Navy Bill passed.
Dec. — "Great Britain is the sole objective of these frantic preparations. . . . The entire naval literature of Germany . . . is saturated with the idea of a war with England, and the people have gradually become impregnated with the obsession of their Sovereign who regards himself as the divinely appointed executor of the British Empire." (*National Review*).

1908

Feb. 14.— German Emperor's private letter to British First Lord of the Admiralty (Lord Tweedmouth) pointing out that the British Navy was sufficiently strong.
April 16.— Mr. Asquith becomes premier.
June — German Emperor declares at Döberitz, "It seems likely that people wish to isolate and provoke us. We shall be able to stand it. . . . So let them attack us; we shall be ready."
Oct. 7.— Austria-Hungary annexes Bosnia and Herzegovina. European crisis.

1909

July — Dr. von Bethmann-Hollweg succeeds Prince von Bülow as Imperial Chancellor.
Aug. — German Chancellor makes overtures to secure British neutrality in the event of a Continental War.

1910

Admiral Mahan, U. S. N.: "For reasons absolutely vital, Great Britain cannot afford to surrender the supremacy at sea. . . . The British navy is left the sole military force in the world superior to anything that Germany can as yet bring into the field. . . . This removed, neutral or fallen in power, Germany . . . becomes the dominant naval state of the world, as well as the predominant country of Europe." ('Interest of America in International Conditions').
May 6.— Death of King Edward; accession of George V.
Aug. — German Emperor declares: "Looking upon myself as the instrument of the Lord, regardless of the views and opinions of the hour, I shall go my way."

1911

Dr. Paul Rohrbach: "Egypt is a prize which for Turkey would well be worth the risk of taking sides with Germany in a war with England."
March 30.— German Chancellor declares disarmament problem insoluble.
July 1.— German cruiser *Panther* at Agadir; Morocco crisis.
" 15.— Germany demands territorial compensation from France, consisting of the whole of the French Kongo from the coast to the river Sanga, and also French right of pre-emption to the Belgian Kongo.
" 21.— Mr. Lloyd George, speaking for the British government, warns Germany.
" 24.— Germany prepared to make concessions to France.
Sept. 26.— Turco-Italian War begins.
Oct. — Appearance of General von Bernhardi's sensational book, 'Germany and the next War.' *Empire Magazine* (London) declares: "All that we can do is to await Germany's pleasure — Peace or War — and prepare for the worst."
Nov. 4.— Franco-German agreement on Morocco.
" 27.— Sir Edward Grey, in Parliament: "One of the essential conditions of our friendships with France and with Russia in the last few years has been the certain knowledge that neither they or we wished to pursue a provocative or aggressive policy. . . . German strength is by itself a guarantee that no other country will desire or seek a quarrel with Germany."
Dec. — "If a nation constantly proclaims that it is the strongest and greatest people on earth, that its destiny is to dominate the world . . . what wonder that its neighbors take it at its word, and insure one another's prosperity and safety by *ententes* and understandings?" *Round Table* (London).

Dec. 6.— Premier Asquith in Parliament states explicitly that the British government was bound by no military engagements which would compel it to go to war without the consent of Parliament.
" 9.— Lord Haldane, former war minister, declares: " The thing I most desire is to see Germany expand herself overseas."

1912

" Europe is drifting slowly but steadily towards an awful catastrophe . . . this formidable evil is threatening England, but it does not originate in England. . . . Germany is the storm-centre, the volcanic zone, in international politics." Charles Sarolea (a Belgian), in ' The Anglo-German Problem.'
" Edward VII, son of a Coburger, grandson of a Saxon princess was never an enemy of Germany." ' Monarchs and Men,' by Maximilian Harden.

May — Mr. A. J. Balfour, in the German magazine *Nord und Sud:* " If Englishmen were sure that a German fleet were only going to be used for defensive purposes, i.e., against aggression, they would not care how large it was. . . . But does Germany make it easy for Britain to take this view?"
March — Germany endeavors to obtain unconditional pledge of neutrality from Great Britain during any war into which Germany " might be forced." British offer " Naval Holiday."
April — German naval increase.
Oct. — Lord Roberts declares that " Germany strikes when Germany's hour has struck."
" 8.— Balkan War begins.
" 15.— End of Turco-Italian War.
" 30.— " Do not let us talk as if the Kaiser could play the part of a Genghiz Khan or an Attila, ravening around the world at the head of armed hordes to devour empires and kingdoms." London *Evening Standard* editorial.
Dec. 5.— Canada offers three dreadnoughts to British navy.

1913

Prince von Bülow, former German Imperial Chancellor, in his book, ' Imperial Germany ': " The fleet was to be built while we maintained our position on the Continent, without our coming into conflict with England, whom we could not as yet oppose at sea. . . . Patriotic feeling must not be aroused to such an extent as to damage irreparably our relations with England, against whom our sea power would for years still be insufficient."

Feb. 17.— M. Poincaré elected President of France.
March — Three Years' Service Bill in France.
" 24.— Mr. Asquith in Parliament declares that Great Britain is under no obligation by treaty to participate in any European War. Sir W. Byles, M. P.: " I believe that England has no enemy."
26.— Mr. Churchill proposes a " naval holiday " to Germany.
May — Second Balkan War.
" 10 — Mr. L. V. Harcourt, British Colonial Secretary: " I can conceive of no circumstances in which Continental operations by our troops would not be a crime against the people of this country."
Aug. — Italy refuses to agree to an Austrian attack on Serbia.
" 10.— End of Balkan War.
Sept. 30.— Lord Roberts, on his 81st birthday, in message to the nation: " Fellow citizens and fellow Britishers. . . . Arm yourselves! . . . Arm and prepare to quit yourselves like men, for the day of your ordeal is at hand."
Oct. 11.— Great increase in Austro-Hungarian army.
Nov. — German Emperor and General von Moltke visit King of the Belgians. General tells King Albert of war with France: " We must settle the business once and for all."
Dec. 1.— Lord Haldane, in Edinburgh: " Our relations with Germany are twice as good as they were two years ago."
" 17.— Liberal-Radical deputation to Mr. Asquith pleading for reduction in naval expenditure.
" 30.— Sir John Brunner, former M. P., issues a circular among members of the National Liberal Federation urging pressure on the government to reduce British armaments.

1914

Jan. 1.— Mr. Lloyd George, Chancellor of the Exchequer, quoted in *Daily Chronicle:* " This is the most favorable moment for 20 years to overhaul our expenditure on armaments . . . " Anglo-German relations were far more friendly than for years past; Germany in particular must be precluded from any idea of challenging British naval supremacy, and that a revolt against military supremacy was spreading through western Europe.
" 15.— Lord Haldane: " There is far greater prospect of peace than ever there was before. No one wants war."
Feb. 4.— Plans in London to celebrate 100 years' peace between Great Britain and United States. Radical disarmament meeting at Queen's Hall.
" 5.— *Daily News* (London) declares: " The German bogey has vanished."
" 24.— *Berliner Post* demands immediate war.
" 28.— Lord Roberts heads deputation to Premier urging preparations for home defense.
March 4.— German press campaign against Russia begins.
" 25.— German Emperor's visit to Vienna.
April 21.— British King and Queen in Paris.
" 28.— Sir Edward Grey repeats the premier's statement that Great Britain is under no European military obligations whatsoever.
May 14.— German Foreign Secretary informs the Reichstag that negotiations with England " were being conducted on both sides in the most friendly spirit."
June — Anglo-German agreement concerning Africa.
" 5.— Admiral Sir Percy Scott declares battleships obsolete owing to submarine developments.
" 11.— Sir Edward Grey repudiates alleged Anglo-Russian Naval Convention, and again denies that Great Britain is under any obligation to participate in a European war.
" 25.— British squadron at Kiel festivities.
" 28.— (Sunday) Assassination of Archduke Francis Ferdinand of Austria, and wife, at Serajevo. British first battle cruiser squadron under Admiral Beatty at Kronstadt in the Gulf of Finland.
July 5.— Potsdam War Council presided over by the emperor, who asked each man in turn, " was he ready for war? " All replied " yes " except the financiers, who asked for two weeks' delay. (Baron Wangenheim to United States Ambassador in Constantinople).
" 16.— British Ambassador in Vienna warns Sir Edward Grey of impending Austrian aggression against Serbia.
" 18-20.— King George reviews at Spithead the largest fleet ever assembled in British waters.
" 20.— French President visits tsar, accompanied by French premier and Foreign Minister.
" 22.— German Foreign Secretary informs British chargé d'affaires in Berlin that there could be no outside interference between Austria-Hungary and Serbia.
" 23.— Austrian ultimatum to Serbia.
" 25.— Serbian reply rejected.
" 27.— Sir Edward Grey proposes a conference; proposal rejected by Germany.
" 28.— Austria-Hungary and Serbia at war.
" 29.— Russia begins to mobilize.
" 31.— " State of War " proclaimed in Germany.
Aug. 2.— German ultimatum to Belgium.
" 3.— King of the Belgians appeals to King George.
" 4.— British ultimatum to Germany.

2. DECLARATIONS OF WAR.

1914

July 28.— Austria against Serbia.
Aug. 1.— Germany against Russia.
" 3.— Germany against France.
" 4.— Great Britain against Germany on expiration of ultimatum, 11 P. M.
" 4.— Germany against Belgium.
" 6.— Austria against Russia.
" 8.— Montenegro against Austria.
" 9.— Serbia against Germany.
" 10.— France against Austria.
" 12.— Great Britain against Austria.
" 12.— Montenegro against Germany.
" 23.— Japan against Germany.
" 25.— Austria against Japan.
" 28.— Austria against Belgium.

Oct. 30.— Russia against Turkey.
Nov. 5.— Great Britain against Turkey.
" 5.— France against Turkey.

1915

May 23.— Italy against Austria-Hungary.
" 23.— San Marino against Austria-Hungary.
Aug. 20.— Italy against Turkey.
Oct. 4.— Russia against Bulgaria.
" 14.— Bulgaria against Serbia.
" 15.— Great Britain against Bulgaria.
" 16.— France against Bulgaria.
" 18.— Italy against Bulgaria.

1916

March 9.— Germany against Portugal.
Aug. 27.— Rumania against Austria-Hungary.
" 27.— Italy against Germany.
" 28.— Germany against Rumania.
" 30.— Turkey against Rumania.

1917

April 6.— United States of America against Germany.
" 8.— Cuba against Germany.
" 9.— Panama against Germany.
July 2.— Greece against the Central Powers.
" 22.— Siam against the Central Powers.
Aug. 4.— Liberia against Germany.
" 14.— China against Germany and Austria.
Sept. 23.— Haiti against Germany.
Oct. 27.— Brazil against Germany.
Dec. 7.— United States against Austria-Hungary.

1918

April 25.— Guatemala against Germany.
May 7.— Nicaragua against Germany.
" 25.— Costa Rica against Germany.
July 15.— Haiti against Germany.
" 19.— Honduras against Germany.

Diplomatic Relations Broken.

1917

April 8.— Austria with the United States.
" 10.— Bulgaria with the United States.
" 13.— Bolivia with Germany.
" 21.— Turkey with the United States.
May 17.— Honduras with Germany.
June 11.— San Salvador with Germany.
" 17.— Santo Domingo with Germany.
Oct. 6.— Uruguay with Germany.
" 6.— Peru with Germany.
Dec. 9.— Ecuador with Germany.

3. WESTERN FRONT.

1914

Aug. 2.— Germans invade Luxemburg.
" 3.— Germans invade Belgium.
" 4.— Bombardment of Liége.
" 7.— Germans enter Liége.
" 9.— First British troops land in France.
" 12.— Belgian victory at Haelen.
" 15.— Last Liége forts fall.
" 17.— Belgian government moved to Antwerp.
" 19.— Belgian army retires to Antwerp.
" 20.— Germans enter Brussels.
" 21.— French retire from Alsace-Lorraine.
" 22.— French defeat at Charleroi.
" 23.— Battle of Mons. Germans in Namur.
" 24.— Germans take Tournai. French retreat.
" 25.— Battle of Landrecies. Germans take Sedan.
" 26.— Battle of Le Cateau. Destruction of Louvain.
" 27.— British occupy Ostend.
" 28.— Capitulation of Longwy.
" 31.— French army falls back.
Sept. 1.— Germans take Soissons.
" 3.— French government moves to Bordeaux. British reach the Marne.
" 5.— End of the great retreat. Marshal Joffre and General French meet.
" 6.— Battle of the Marne begins.
" 7.— Fall of Maubeuge.
" 8.— Germans under Von Kluck in retreat. Great stroke by General Foch.
" 9.— Fighting along the Marne. Von Bülow's army in retreat.
" 10.— End of Battle of the Marne.
" 11.— French enter Chalons.
" 12.— Germans on the Aisne. Beginning of trench warfare.
" 13.— Battle of the Aisne begins.
" 23.— Germans take Saint Mihiel.
" 28.— Attack on Antwerp begins.
Oct. 1.— Antwerp forts destroyed.
" 3.— Belgian government moves to Ostend.
" 4.— British troops reach Antwerp.
" 6.— Germans bombard Arras.
" 8.— Antwerp bombarded; garrison retires.
" 9.— Fall of Antwerp.
" 13.— Germans take Lille.
" 21.— First battle of Ypres begins.
" 31.— British thrust back at Ypres.
Nov. 10.— Germans take Dixmude.
" 17.— End of first battle of Ypres.
Dec. 24-25.— British air raids on Brussels and Cuxhaven.

1915

Jan. 8.— Battle of Soissons begins.
" 15.— End of battle of Soissons.
" 19.— German air raid on England (Norfolk).
Feb. 11.— British air raid on Zeebrugge.
" 21.— Zeppelin raid on Calais.
" 26.— Severe fighting in Champagne.
March 10.— Battle of Neuve Chapelle.
" 18.— Zeppelin raid on Calais.
" 20.— Zeppelin raid on Paris.
April 14.— Zeppelin raid on Northumberland.
" 15.— Zeppelin raid on East Anglia.
" 22.— Second battle of Ypres. Poison gas first used by the Germans.
May 16.— Battle of Festubert. Zeppelin raid on Calais.
" 26.— Zeppelin raid on Southend, near London.
" 31.— Zeppelin raid on London.
June 4.— Zeppelin raid on London.
" 6.— Zeppelin raid on England.
" 15.— French air raid on Karlsruhe.
July 1.— Severe fighting in the Argonne.
Aug. 12.— Zeppelin raid on England.
" 17.— Zeppelin raid on England.
Sept. 8.— Zeppelin raid on England.
" 23.— Great Allied offensive opens.
" 30.— French success in Champagne.
Oct. 12.— Severe Zeppelin raid on London.
" 13.— Edith Cavell shot.
Nov. 14.— Fighting for the " Labyrinth " in Artois.
Dec. 15.— Sir Douglas Haig succeeds General French as British commander-in-chief.

1916

Jan. 29.— Zeppelin raid on Paris.
" 31.— Zeppelin raid on England, 67 killed.
Feb. 21.— German attack on Verdun begins.
" 25.— Verdun: Fort Douaumont captured.
March 5.— Zeppelin raid on England: 70 casualties.
" 17.— Heavy bombardment of Verdun.
" 30.— Germans take Malancourt.
" 31.— Zeppelin brought down in the Thames.
April 1-5.— Zeppelin raids on England.
" 10.— German gains at Verdun.
" 25.— Zeppelin raids on England.
May 1-2.— Zeppelin raids on Scotland and England.
" 15.— Fight for Vimy Ridge.
" 24.— Germans capture Cumières.
June 7.— Verdun: Germans take Fort Vaux.
" 15.— Germans renew Verdun attack.
" 16.— Germans reach nearest point to Verdun, barely four miles.
" 23.— Fall of Thiaumont and Fleury.
July 1.— Somme battle begins.
Aug. 3.— French recapture Fleury.
Sept. 3.— British take Guillemont.
" 12.— French advance on the Somme.
Oct. 18.— French capture Sailly-Saillisel.
" 24.— French retake Douaumont and Thiaumont.
Nov. 2.— Germans evacuate Fort Vaux.
" 15.— British victory on the Ancre.
" 18.— Battle of the Somme ends.
Dec. 15.— French victory at Verdun.
" 19.— Marshal Joffre retires, succeeded by General Nivelle as commander-in-chief.

1917

Feb. 14.— British penetrate to third German line near Arras.
March 5.— Great German attack on Verdun.
" 7-12.— French successes in Champagne.

March 17.— British take Bapaume.
" 18.— Germans retire from Peronne.
" 19.— Great advance begins on Hindenburg Line.
" 31.— French and British successes.
April 3.— German retreat to Hindenburg Line.
" 6.— Second battle of the Aisne begins.
" 9–21.— Battle of Arras (Vimy Ridge).
" 12.— Battle of Lens.
" 16.— General Nivelle's offensive on the Aisne opens.
" 23–28.— Battles of the Scarpe.
May 3–June 15.— Fighting on Hindenburg Line.
" 4.— Capture of Craonne.
" 16.— General Pétain succeeds General Nivelle as commander-in-chief.
June 7–12.— Battle of Ypres (Messines Ridge).
" 26.— Battle at Lens.
July 5.— German counter-offensive on the Aisne.
July 11–Aug. 16.— Battles of the coast.
Aug. 17.— Germans fire Saint Quentin Cathedral.
" 20.— French gains near Verdun.
" 24.— French capture Hill 304 (Verdun).
Sept. 8.— French capture Chaume Wood, Verdun.
" 20.— Battle of the Menin Road.
Oct. 4.— Battle of Broodseinde Ridge.
Nov. 20.— Battle for Cambrai.
Dec. 5.— Cambrai: British withdraw, relinquishing much conquered territory.

1918

March 21.— German spring offensive began. British driven back near Amiens and Ypres.
" 24.— Germans retake Bapaume and Peronne.
April 11.— Armentières retaken by the Germans.
" 14.— Foch becomes commander-in-chief of the Allied Forces in France.
" 26.— Germans take Kemmel Hill.
May 27.— Germany's second great offensive is launched.
" 29.— Germans take Soissons.
" 30.— Germans advance to within two miles of Rheims.
June 1.— Germans capture Neuilly Heights and reach Chateau-Thierry.
" 4.— Americans help to drive back German forces across the Marne.
" 11.— Allied counter-offensive begins from Montdidier and Noyon. German advance stops.
July 10.— French attack on Marne salient.
" 18.— Allied counter-offensive begins. Soissons is recovered by the Allies.
" 19.— Germans begin retreat back over the Marne.
" 21.— Americans and French take Chateau-Thierry.
Aug. 3.— Allies advance to the Aisne and the Vesle on a 30-mile front.
" 4.— Fismes recovered by the Allies.
" 6.— The 27th German Division is put out of action on the Somme salient.
" 8.— Allied forces on the Somme salient drive a wedge in the German position. The Lys salient is evacuated by the Germans.
" 10.— Montdidier recaptured by the French.
" 29.— Bapaume and Noyon recovered from the Germans.
" 30.— German retreat in Flanders.
" 31.— Kemmel Hill retaken by the Allies.
Sept. 1.— Peronne recovered from the Germans.
" 3.— Germans retreat from the Scarpe to the Somme.
" 12–14.— Americans eliminate the Saint Mihiel salient. Verdun-Toul Railway opened to the Allies.
" 26.— Americans and French attack in the Argonne.
" 27.— The American 27th Division takes part in attack which breaks the Hindenburg Line.
" 30.— Belgians retake Roulers.
Oct. 1.— French take Saint Quentin.
" 6.— Americans take Saint Etienne. Le Cateau evacuated by the Germans.
" 6.— First Peace Note sent by the German government to the American president.
" 8.— President Wilson replies to German Peace Note.
" 9.— Cambrai and Roncroi recovered by the Allies.
" 12.— German government dispatches a second Peace Note to the President of the United States.
" 14.— President Wilson in his reply states that the conditions of peace must be left to the military advisers, illegal and inhumane practices must cease and the German people must change their government.
" 17.— Ostend, Bruges and Lille recovered by the Allies.
Nov. 4.— Valenciennes taken by the British.
" 7.— Americans capture Sedan, thereby cutting one of the main German lines of communication and break the backbone of Teuton resistance in the West.
" 9.— Maubeuge taken by the British. William II abdicates.
Nov. 10.— William II flees to Holland. British reach environs of Mons, scene of their defeat in the early days of the war.
" 11.— Germans sign armistice. Hostilities cease at 11 A. M.
Dec. 6.— Americans enter Mainz and Belgians enter Düsseldorf.
" 8.— British enter Cologne.

1919

Jan. 18.— Peace Conference opens at Versailles.
May 7.— German delegates receive Peace Terms.
June 28.— German and Allied delegates sign the Treaty at Versailles.

4. EASTERN FRONT.

1914

Aug. 5.— Russians cross into East Prussia.
" 7.— Russian invasion of East Prussia.
" 10.— Austrians invade Russian Poland.
" 14.— Russian victory at Sokal.
" 16.— Russian victory at Gumbinnen.
" 20.— Russians take Lyck and Goldap.
" 21.— Germans defeated at Frankenau.
" 23.— Russians capture towns in East Prussia.
" 25.— Russians approach Koenigsberg.
" 26.— Battle of Tannenberg begins.
" 27.— Russians seize Tarnopol and advance on Lemberg.
" 31.— Russians heavily defeated at Tannenberg; they evacuate East Prussia.
Sept. 1.— Battle of Lemberg begins.
" 2.— Russians fall back to the Bug.
" 3.— Lemberg surrenders to Russians.
" 4.— Russians advance into Carpathian passes. Austrian attacks fail.
" 6.— Great battle begins between the Vistula and the Dnieper.
" 7.— German advance into Russia begins.
" 8.— Russian successes in Galicia.
" 10.— End of Galician battles; Austrians defeated and retire toward the San.
" 12.— Austrians defeated at Tomasov. Russian retirement to the Niemen.
" 15.— Germans invade Russia. Russians take Czernowitz.
" 20.— Russians attack Jaroslav.
" 22.— Przemysl invested by the Russians.
" 23.— Jaroslav surrenders to Russians.
" 28.— Russians hold Galicia, invade Hungary and threaten Cracow.
Oct. 1.— Battle of Augustovo begins.
" 4.— Russians again in East Prussia.
" 5.— German advance on Warsaw begins.
" 9.— End of Russian advance in East Prussia.
" 10.— Germans in Lodz.
" 15.— Battle on the Vistula begins. Siege of Przemysl raised for three weeks.
" 25.— Germans retire from the Vistula. First attempt on Warsaw fails.
Nov. 10.— Cossacks enter Posen; cut German railroad line.
" 12.— Russians 20 miles from Cracow.
" 13.— Second German assault on Warsaw begins.
" 14.— Russians driven back to Kutnow.
" 23.— Russian front broken near Lodz.
" 27.— Russians begin to evacuate Lodz.
Dec. 7.— Second battle for Warsaw begins.
" 8.— Indecisive battle near Cracow.
" 12.— Russians retreat from Cracow.
" 15.— Sortie by garrison of Przemysl.
" 18.— Russian retreat ends on the Bzura.
" 25.— Second German attack on Warsaw fails.

1915

Jan. 4.— Russian advance in Bukovina begins.
" 17.— Russians hold most of Bukovina.
" 18.— Aústrians retake Czernowitz.
" 31.— Germans begin third attack on Warsaw.
Feb. 4.— German advance checked.
" 6.— Russians reappear in East Prussia and advance to Tilsit.
" 7.— German advance begins. Russian retreat in East Prussia. Russian defeat near the Niemen.
" 12.— German army invades Russia.
" 24.— Germans take Przasnysz.
" 26.— Russians retake Przasnysz.
" 28.— Germans begin retreat from North Poland.
March 8.— Russian success. Germans retreat to the frontier.
" 13.— Russians breach the defences of Przemysl.
" 17.— Russians occupy Memel.
" 21.— Germans retake Memel.
" 22.— Przemysl surrenders to Russians.
" 25.— Russians cross the Pruth.

April 17.— Austrians attack near Stryj.
" 22.— Attack ends in failure.
" 25.— Second Austrian attempt at Stryj.
" 28.— Mackensen's great offensive against Russians in Galicia begins. Battle of the Dunajec.
May 2.— Germans cross the Biala; take Ciezkowice.
" 7.— Germans cross the Wisloka at Jaslo; Russians driven back.
" 8.— Germans break Russian line; cross the Wistok.
" 11.— Russians retire to the San.
" 15.— Great battle of the San begins. Fighting at Opatov between Austrians and Russians. Austrians retreat to the Pruth. Germans take Jaroslav.
" 17.— Austro-Germans force the crossing of the San.
" 18.— Austrians defeated at Opatov.
" 19.— Germans take Lutkov.
" 31.— Germans storm forts at Przemysl.
June 1.— Germans capture Stryj.
" 2.— Germans regain Przemysl.
" 7.— Germans force the Dniester at Zuravno.
" 8.— Three days' battle on the Dniester.
" 11.— Russian victory on the Dniester.
" 12.— Mackensen's "phalanx" advances.
" 14.— Russians retire on Grodek.
" 17.— Russians begin to evacuate Lemberg.
" 20.— Russians defeated at Rava Russka.
" 22.— Austrians recover Lemberg and Galicia.
" 28.— Austrians capture Halicz.
July 2.— Austrians take Krasnik.
" 4.— Russians driven from the Wisnitza.
" 5.— Battle of Krasnik.
" 7.— German advance on Warsaw checked.
" 9.— Austrians defeated at Krasnik.
" 14.— Germans capture Przasnysz.
" 15.— Russians prepare to abandon Warsaw.
" 16.— Battle of Krasnostav.
" 18.— Russian defeat at Krasnostav.
" 20.— Germans take Radom and Windau; advance on Kovno.
" 22.— Germans invest Ivangorod.
" 26.— Heavy fighting before Warsaw.
" 30.— Germans occupy Lublin and Cholm.
" 31.— Germans occupy Mitau.
Aug. 4.— Germans occupy Ivangorod.
" 5.— Germans enter Warsaw. Russians prepare to evacuate Riga.
" 7.— Germans repulsed near Riga.
" 12.— Fighting near Dvinsk. Germans repulsed near Mitau.
" 15.— Germans capture Vlodava and storm Kovno.
" 18.— Germans cut Brest-Litovsk railway.
" 19.— Fall of Novo Georgievsk.
" 23.— Germans capture Ossowietz. Russians retire.
" 25.— Germans take Brest-Litovsk.
" 26.— Germans capture Bialystok.
" 28.— Great German attack on the Dvina.
Sept. 1.— Germans storm Grodno.
" 5.— Tsar Nicholas takes command of Russian armies.
" 12.— Germans cut Petrograd-Vilna Railway.
" 16.— Germans take Pinsk.
" 18.— Capitulation of Vilna.
Oct. 3.— Great battle for Dvinsk begins.
" 10.— German attack on Dvinsk fails.
" 18.— German attack on Riga.
Nov. 11.— Russians drive Germans back from Riga.
" 15.— Austrians drive Russians across the Styr.
Dec. 27.— Great battle between Austro-Germans and Russians at Toporoutz. Russian success.

1916

Jan. 1.— Russians win on the Styr and the Strypa.
" 8.— Russians take Chartorysk.
" 19.— Russian attack near Czernowitz.
Feb. 2.— Austro-Russian fighting in Bukovina.
March 17.— German offensive in the north.
June 3.— Russians take 13,000 Austrian prisoners.
" 10.— Austrians routed near Czernowitz.
" 17.— Russians take Czernowitz.
" 24.— Russians hold most of Bukovina.
" 29.— Russians take Kolomea.
July 4.— Russian patrols enter Hungary.
" 7.— Russian offensive on Riga front.
" 19.— Russians cross Carpathians and threaten Hungary.
" 23.— Hindenburg's Riga line pierced.
" 28.— Russians capture Brody.
Aug. 10.— Lemberg reinforced by Turkish troops. Russians take Stanislau.
" 15.— Russians capture Jablonitza.
" 21.— Russians press through Carpathians.
" 28.— Fighting on Transylvania frontier. Rumania in the war.
" 30.— Rumanians drive Austrians out of Kronstadt.
Sept. 3–11.— Rumanians occupy Orsova, Hermannstadt and Helimbar.
Sept. 28–30.— Germans defeat Rumanians at Hermannstadt.
Oct. 8.— Austro-Germans recapture Kronstadt; Rumanian army in retreat.
" 11.— Austro-German invasion of Rumania.
" 18–28.— Teutons checked in Transylvania.
" 22.— Russian defeat in Galicia.
" 23.— Rumanians lose Constanza.
Nov. 3.— Rumanian successes.
" 9–12.— Russo-Rumanian offensive in Transylvania.
" 21.— Teutons take Craiova.
Dec. 6.— Teutons capture Bucharest.

1917

Jan. 5.— Russian offensive begins near Riga.
" 23.— Russians forced back near Tirul marshes.
Feb. 1.— Russian line broken near Halicz.
" 11.— Germans driven back near Halicz.
March 8.— Russian revolution begins.
" 15.— Russian government overthrown. General Alexeieff commander-in-chief. Abdication of the Tsar Nicholas II.
April 6.— German victory on the Stokhod.
" 14.— Germans bombard Brody.
May 4.— Russians attack in Rumania. Disorganization of Russian army sets in. Generals resign. Brussilov commander-in-chief.
June 17.— Russian offensive in Galicia.
July 1.— Russian advance on Lemberg.
" 10.— Russians take Helicz. Teuton counter-offensive develops.
" 24.— Teutons capture Tarnopol. Russian and Rumanian attacks fail. Teutons enter Russian territory.
Aug. 3.— Russians retreat in Bukovina, abandoning Czernowitz.
" 15–16.— Rumanians check Germans near Marasechti.
" 21.— Germans attack near Riga; cross the Dvina.
Sept. 2.— Russians retire from Riga.
" 21.— Germans capture Jacobstadt.
Oct. 12.— German expedition seizes Oesel Island.
Nov. 8.— Bolsheviki overthrow Kerensky.
Dec. 22.— Peace negotiations opened with the Central Powers at Brest-Litovsk.

1918

Jan. 6.— Armistice proclaimed.
" 10.— Mutiny of Russian Black Sea fleet.
Feb. 1.— Ukrainian Republic recognized by the Central Powers.
" 9.— Peace signed at Brest-Litovsk between Germany, Austria-Hungary, Bulgaria and Turkey on one side, and the Ukrainian Rada on the other.
" 10.— Bolsheviki make formal announcement that Russia is out of the war.
" 18.— Germany reopens hostilities against Russia.
" 25.— Germans capture Reval.
March 3.— The Bolsheviki sign peace treaty at Brest-Litovsk with the Central Powers.
" 3.— Peace negotiations open between the Central Powers and Rumania.
" 5.— Germans land troops on the Aaland Islands.
" 7.— Finland and Germany sign a treaty of peace.
" 13.— Germans enter Odessa.
" 14.— Soviet Congress agrees to ratify the Treaty of Brest-Litovsk.
" 19.— Allies protest against German-Russian peace.
April 5.— Japanese and British marines land in Vladivostok.
" 8.— Germans occupy Charkov.
" 30.— Germans take Viborg.
May 1.— Germans occupy Sevastopol, where they also find most of the Russian Black Sea fleet.
" 7.— Germany and Rumania sign a treaty of peace at Bucharest.
Aug. 15.— Allied forces move 100 miles from Archangel along the Vologda Railway line.
Nov. 1.— Republic of Hungary proclaimed. Republic of German Austria proclaimed.

5. SOUTHERN FRONT.

1914

July 28.— Austrians bombard Belgrade, evacuated by Serbian army.
Aug. 6.— Austrians fail to cross the Danube.
" 12.— Serbians and Montenegrins enter Bosnia.
" 16.— Austrians capture Shabatz.
" 17.— Serbs defeat Austrians near Shabatz.
" 18.— Serbian victory on the Jadar.
" 23.— Austrians driven out of Serbia.
" 26.— Austrians evacuate Novi Bazar.
Sept. 6.— Serbs take Semlin.

Sept. 8.— Second Austrian attack begins.
" 15.— Austrians driven across the Drina.
Nov. 3.— Third Austrian attack on Serbia.
Dec. 2.— Battle of the Rudnik and Maljen ridges begin.
" 6.— Austrians routed by Serbians.
" 15.— Serbians retake Belgrade; Serbia cleared of Austrians.

1915

Feb. 19.— Allied squadron bombards Dardanelles forts.
April 25.— British troops land in Gallipoli.
May 1.— Turkish attack in Gallipoli.
" 8.— Slight Allied advance on Krithia.
" 9.— Australians storm Turkish trenches at Sari Bahr.
" 18.— Turks attack Australian position.
" 23.— Italy enters the war. Austrians begin operations against Italy.
" 28.— Turkish success in Gallipoli.
" 30.— Italians capture Cortina.
June 4.— Third Allied attack on Krithia and Achi Baba, Gallipoli.
" 7.— Italians begin advance on Trieste.
" 9.— Italians take Monfalcone.
" 15.— Italian attack on Podgora position.
" 16.— Severe fighting in Gallipoli.
" 18.— Italians defeat Austrians at Plava.
" 21.— Great Allied attack in Gallipoli.
" 28.— Italians capture Castlenuovo.
" 29–**July** 1.— Turkish attacks repulsed in Gallipoli.
July 2.— Italians begin attack on Gorizia.
" 17–20.— Italian successes on the Isonzo and at Podgora.
Aug. 6.— British attack on Achi Baba; landing at Suvla Bay.
" 8.— New Zealanders take Chunuk Bair. Gen. Sir Ian Hamilton takes command in Gallipoli.
" 10.— Turks recapture Chunuk Bair.
" 21–22.— Allied attack on Suvla fails.
Sept. 13.— British Dardanelles losses to date 17,608 killed.
" 20.— Bulgarian mobilization.
Oct. 3.— Russian ultimatum to Bulgaria.
" 4.— Allies landing troops at Salonica.
" 5.— Bulgaria in the war.
" 7.— Teutons and Bulgarians begin invasion of Serbia.
" 9.— Germans take Belgrade.
" 11.— Serbia appeals to Greece for help.
" 12.— Bulgarians attack Serbia.
" 15.— Fighting between French and Bulgarians.
" 16.— New British commander in Gallipoli, Sir Charles Monro.
" 22.— Bulgarians capture Uskub. Italian advance on the Isonzo.
" 24.— Germans open Danube route to Constantinople.
" 29.— British fight Bulgarians near Lake Doiran.
Nov. 5.— Allies fail to unite with Serbians.
" 6.— Fall of Nish, Serbia.
" 12.— Germans hold Belgrade-Constantinople Railway.
" 14.— Austrian air raid on Verona.
" 23.— Serbia overun; army retreats into Albania.
Dec. 2.— French troops withdrawing from Serbia to Greece.
" 8.— British evacuation of Gallipoli begins.
" 9.— Franco-British force retreats into Greece
" 10.— Greeks hand Salonica over to Allies.
" 19.— British attack at Cape Helles (Gallipoli).
" 20.— Suvla and Anzac evacuated.
" 21.— Italian troops land at Avlona, Albania.
" 30.— German air raid on Salonica.

1916

Jan. 9.— Gallipoli finally evacuated.
" 10.— Austrians capture Mount Lovtchen, Montenegro.
" 13.— Austrians enter Cettinje.
" 23.— Austrians hold Scutari and Montenegro.
Feb. 14.— Austrian air raid on Milan.
March 28.— Austrian attacks in Gorizia.
April 14.— British air raids on Constantinople and Adrianople.
" 17.— Italians capture the Col di Lana
May 14.— Austrian offensive in the Trentino.
" 18.— Italians retire in the Trentino.
" 26.— Bulgarians advance into Greece.
" 27.— Austrians on Italian territory.
" 29.— Italians evacuate Asiago and Arsiero.
" 31.— Italian towns taken by Austrians.
June 5.— Austrian advance into Italy.
" 25.— Italians recover Asiago and Arsiero.
" 27.— Austrians retreating from Italy.
Aug. 6.— Italians open offensive on the Isonzo.
" 9.— Italians capture Gorizia.
" 17.— Serbians recommence hostilities.
" 25.— Bulgarians enter Kavala.
" 27.— Entry of Rumania into the war.
Sept. 6.— Bulgarians capture Tutrakan, Dobrudja.
Oct. 10.— Italian advance on the Carso.
" 11.— Greek fleet surrendered to Allies.
" 14.— French take over Greek mails and telegraphs.
Nov. 1.— New Italian offensive on the Carso.
" 19.— Allied and Serbian troops enter Monastir.
Dec. 8.— Allies proclaim blockade of Greece.

1917

May 14.— Italian offensive in Isonzo opened.
" 15–23.— Italian successes.
June 4.— Italians proclaim Albania an independent state under Italian protection.
" 5.— M. Jonnart (French) appointed High Commissioner for the Allies in Greece.
" 11.— Abdication of the King of Greece.
" 25.— M. Venizelos again Premier of United Greece.
Aug. 20.— Second Italian offensive on Isonzo and the Carso.
" 27.— Capture of Mount Santo.
" 29.— Italians advance on Bainsizza Plateau.
Oct. 24.— Great Austro-German offensive against Italians opens; Italian front shattered for 20 miles from Tolmino. Teutons take 10,000 prisoners.
" 28.— Italians lose Gorizia again.
" 29.— Fall of Udine.
Nov. 10.— Fall of Asiago.
" 11.— Italian line established on the Piave, after losing over 250,000 prisoners since Oct. 24.
" 23.— Austro-German attacks checked.
Dec. 5.— Austro-German offensive on Asiago Plateau.
" 24.— Italians regain several positions.
" 30.— French troops assist Italians.

1918

Jan. 29.— Italians pierce enemy's line near Asiago.
Feb. 24.— Turks take Trebizond.
March 11.— Turks retake Erzerum.
April 6.— Turks occupy Ardahan.
" 13.— Turks take Batum.
June 15.— Austrians start offensive from the Asiago Plateau to the sea.
" 17.— Malinoff succeeds Radoslavoff as Premier of Bulgaria.
July 7.— British bombard Constantinople from the air.
Sept. 1.— British advance in Macedonia.
" 16.— First and second Bulgar lines in Macedonia carried by British.
" 18.— Franco-Serb troops advance in Serbia.
" 23.— French capture Prilet, Macedonia. Anglo-Greek and Franco-Greek forces join in pursuit of the Bulgars in the Doiran area.
" 25.— Bulgarians retreat all along the line, leaving the Monastir-Prilep-Gradsko road in the hands of the Entente.
" 26.— Serbs take Veles. British take Strumnitsa.
" 27.— Bulgaria seeks an armistice.
" 29.— Bulgaria signs armistice and surrenders.
Oct. 2.— Serbs enter Nish.
" 3.— Greeks enter Drama.
" 5.— Ferdinand of Bulgaria abdicates.
" 14.— Italians capture Durazzo.
" 15.— Czech revolution breaks out in Austria.
" 16.— Serbs take Krushevatz.
" 27.— British and Italians cross the Piave.
" 29.— Austria appeals to Secretary Lansing for an immediate armistice.
" 30.— Austrian command on Italian front demands armistice. Entire Turkish forces on the Tigris, numbering 7,000, surrender. Turkey granted armistice.
Nov. 2.— Italians in the Trentino cross the Austrian frontier.
" 3.— Italians take Trent. Serbians occupy Belgrade.
" 4.— Austria accepts truce terms.

1919

June 2.— Austrian delegates receive peace terms from the Versailles Peace Conference.
" 10.— Austria signs Peace Treaty at Paris.

6. NAVAL OPERATIONS.

1914.

Aug. 2.— Germans bombard Libau, Russia.
" 5.— German mine-layer *Königin Luise* sunk by British destroyer.
" 6.— British war vessel *Amphion* sunk by mine.
" 13.— Dar-es-Salam, German East Africa, bombarded by British.
" 15.— Japanese ultimatum to Germany.
" 28.— Battle in the Bight of Heligoland. New Zealand fleet seizes German Samoa.

Sept. 3.— Allied warships bombard Cattaro.
" 10.— German warship *Emden* in Bay of Bengal.
" 11.— British seize New Pomerania.
" 22.— British cruisers *Aboukir*, *Cressy* and *Hogue* sunk by German submarine.
Oct. 29.— Turkish warships raid Odessa.
" 30.— *Emden* destroys a Russian and French warship off Penang.
Nov. 1.— British squadron defeated off Coronel, Chile.
" 3.— German cruisers bombard Yarmouth. Allies bombard Dardanelles forts.
" 9.— *Emden* destroyed by the Australian cruiser *Sydney*.
" 18.— Engagement in the Black Sea.
Dec. 8.— Battle of the Falkland Islands; German squadron of von Spee destroyed.
" 16.— German cruisers bombard Scarborough and Hartlepool, England.

1915

Jan. 1.— British battleship *Formidable* torpedoed.
" 24.— Naval battle in the North Sea; *Blücher* sunk.
Feb. 18.— German "blockade" of Great Britain begins.
" 25.— Bombardment of Dardanelles forts renewed.
March 5.— Allies bombard Smyrna.
" 6.— Great attack on Dardanelles.
" 14.— German warship *Dresden* sunk by British off Juan Fernandez.
" 18.— Allied Dardanelles attack fails. *Irresistible*, *Ocean* and *Bouvet* sunk.
" 28.— Russians bombard Bosphorus forts.
" 31.— Germans bombard Libau.
April 27.— British submarine enters Sea of Marmora. French warship *Leon Gambetta* sunk.
May 7.— *Lusitania* sunk.
" 9.— Germans capture Libau, Russia.
" 12.— British warship *Goliath* sunk.
" 24.— Austrian raid on Italian coast.
" 26.— British warship *Triumph* torpedoed, Gallipoli.
" 27.— British warship *Majestic* torpedoed, Gallipoli.
June 30.— Action in Baltic between Germans and Russians.
July 2.— Russo-German action off Gothland.
" 8.— Italian cruiser *Amalfi* sunk by Austrian submarine.
" 11.— *Königsberg* destroyed, East Africa.
" 18.— Austrian submarine sinks the *Giuseppe Garibaldi* in the Adriatic.
" 25.— Italians occupy island of Pelagosa.
Aug. 2.— German transport sunk by British submarine in the Baltic.
" 9.— Turkish battleship sunk by British submarine.
" 11.— Italian submarine sinks Austrian submarine.
" 12.— Turkish transport sunk by British seaplane.
" 14.— British transport *Royal Edward* sunk.
" 16.— Russo-German action in Gulf of Riga.
" 18.— *Moltke* torpedoed by British submarine.
" 19.— German submarine sinks the *Arabic*.
" 20.— Russians defeat landing operations on the Gulf of Riga.
" 21.— Germans evacuate the Gulf of Riga.
" 23.— Allied fleet bombards Zeebrugge.
Sept 4.— *Hesperian* sunk by German submarine.
" 7.— Allied fleet bombard Belgian coast.
Oct. 19.— British transport *Ramazan* sunk in the Ægean Sea.
" 21.— British bombard Bulgarian coast.
" 22.— Russian squadron bombards Varna.
" 23.— German cruiser sunk in Baltic by British submarine.
" 26.— British transport *Marquette* torpedoed in the Ægean Sea.
" 29.— British mine-sweeper *Hythe* sunk, Gallipoli.
Nov. 5.— American protest against the maritime policy of England and France.
" 7.— Italian liner *Ancona* sunk by German submarine.
" 14.— British submarine lost in Sea of Marmora.
" 17.— British hospital ship *Anglia* sunk by mine.
Dec. 16.— German cruiser *Bremen* sunk in Baltic.
" 24.— French liner *Ville de Ciotat* sunk in the Mediterranean by a submarine.
" 30.— British liner *Persia* sunk in Mediterranean.

1916

Jan. 2.— British passenger steamer *Glengyle* sunk in Mediterranean.
" 7.— Italian steamer conveying 400 Montenegrin recruits from America sunk by mine in the Adriatic; 200 lives lost.
" 8.— British warship *King Edward VII* sunk by mine in North Sea.
" 15.— German raider *Moewe* captures British steamer *Appam* off Madeira.
" 18.— Bulgarian coast bombarded by Franco-British warships.
Feb. 1.— The *Appam*, manned by a German prize crew, arrived at Norfolk, Va.
" 6.— Austro-Italian action in the Adriatic.
" 8.— French cruiser *Amiral Charner* sunk by submarine.
" 11.— British war vessel *Arethusa* sunk by a mine.
" 26.— French transport *Provence II* sunk in Mediterranean; over 3,000 lives lost.
" 28.— Fight between the British war vessel *Alcantara* and the German raider *Greif* in North Sea; both sunk.
March 1.— British *Primula* sunk in Mediterranean.
" 4.— Raider *Moewe* returns to Germany.
" 9.— British warship *Coquette* and a British torpedo boat sunk by mines.
" 12.— British warship *Fauvette* sunk by mine.
" 16.— Dutch liner *Tubantia* sunk by Germans.
" 18.— Dutch liner *Palembang* sunk by Germans.
" 22.— Germans sink liner *Minneapolis*, used as a transport, in Mediterranean.
" 24.— Germans torpedo the *Sussex* in the channel.
" 25.— British destroyers and seaplanes raid Zeppelin sheds in Schleswig.
" 30.— Hospital ship *Portugal* sunk by Turks in Black Sea.
" 31.— British warship bombards Smyrna.
April 21.— German auxiliary cruiser and a submarine attempt to land arms in Ireland. The cruiser is sunk; arrest of Casement.
" 25.— German squadron and Zeppelins raid Lowestoft and Yarmouth, England.
May 31.— Battle of Jutland.
June 1.— End of battle of Jutland.
" 5.— British war vessel *Hampshire* sunk with Lord Kitchener on board, off the Orkneys.
Aug. 2.— Italian superdreadnought *Leonardo da Vinci* blown up in Taranto Harbor.
" 13.— British destroyer *Lassoo* torpedoed or mined off Dutch coast.
" 19.— British light cruisers *Nottingham* and *Falmouth* torpedoed and sunk. German battleship of *Nassau* class torpedoed by submarine E-23.
" 25.— British armed boarding steamship *Duke of Albany* torpedoed and sunk by submarine in the North Sea.
Oct. 7.— German war submarine U-53 reaches Newport, R. I.
" 8.— U-53 torpedoes five vessels outside of Nantucket.
" 20.— Russian battleship *Imperatriza Maria* sunk by internal explosion near mouth of the Danube.
" 23.— British mine-sweeper *Genissa* torpedoed and sunk.
" 26.— German destroyer attack in English Channel. British destroyer *Flirt* lost and *Nubian* disabled. Empty British transport *Queen* sunk.
Nov. 1.— Dutch vessel *Aldambi*, being taken by German prize crew into Zeebrugge, rescued by British scout craft and five German destroyers put to flight. Italian torpedo boats raid Austrian naval base at Pola.
" 4.— Russian fleet again bombards Costanza.
" 10.— Baltic port west of Reval shelled by German destroyers, six to nine of which are sunk by the Russians.
" 21.— British hospital ship *Britannic* sunk by mine or torpedo in the Ægean Sea.
" 24.— British hospital ship *Braemar Castle* sunk by mine in Ægean Sea.
" 26.— German naval raid on Lowestoft, England. British trawler *Narval* sunk.
Dec. 8.— French battleship *Suffren* sunk by submarine northwest of Lisbon.
" 10.— German commercial submarine *Deutschland* completes her second voyage to the United States.
" 14.— British horse transport *Russian* sunk in Mediterranean by submarine. Seventeen Americans lose lives on "warship."
" 27.— French battleship *Gaulois* sunk by submarine in the Mediterranean.

1917

Jan. 1.— British transport *Ibernia* sunk by submarine in Mediterranean; 120 men and 33 of crew missing.
" 7.— British seaplane carrier *Benmy-Chree* sunk by gunfire at Kastelorizo, Asia Minor.
" 9.— British battleship *Cornwallis* sunk by submarine in Mediterranean; 13 lives lost.
" 14.— Japanese armored cruiser *Tsukuba* destroyed by internal explosion in Yoksuka Harbor.
" 17.— British Admiralty announces German raider sunk eight British and two French vessels between 12 December and 12 January; crews put on board three captured craft, one of which reaches Pernambuco, Brazil.

Jan. 18.— German Admiralty announces that the *Yarrowdale*, captured by German raider, was taken to a German port on 31 December, with 469 prisoners.
" 22.— Division of German destroyers encounter light British naval force off Holland; one of former sunk. Similar action off Schouwen Bank; one British destroyer torpedoed. German destroyer V-69 puts into Ymuiden badly wrecked.
" 25.— British auxiliary cruiser *Laurentic* sunk by submarine or mine off the Irish coast. Light German warship raids Suffolk coast causing loss of life.
" 26.— New British mine-field off Jutland coast announced from Scandinavia.
Feb. 22.— Seven Dutch ships torpedoed outside of Falmouth; three sunk.
" 25.— German destroyers bombard Broadstairs and Margate.
March 22.— German Admiralty announces arrival at home port of commerce destroyer *Moewe* from second voyage, having captured 22 steamers and five sailing craft.
" 23.— Loss of battleship *Danton* in Mediterranean by torpedo, on 19 March, announced by French Admiralty.
April 2.— American armed liner *Antec* torpedoed off French coast.
" 7.— Two German destroyers torpedoed off Zeebrugge; one sunk.
" 10.— British hospital ship *Salta* mined in the Channel.
" 17.— British hospital ships *Donegal* and *Lanfranc* sunk by submarines in Channel.
" 20.— Six German destroyers attempt a raid on Dover; two and possibly a third sunk by British destroyers *Swift* and *Broke* in old-style naval combat.
" 26.— German naval raid on Ramsgate.
May 2.— British destroyer loses 62 men by striking mine in Channel.
" 10.— Eleven German destroyers emerging from Zeebrugge forced back by Commodore Tyrwhitt, operating light naval force from Harwich.
" 12.— Zeebrugge bombarded by Tyrwhitt with assistance of air squadron.
" 15.— Austrian light cruisers and destroyers sink 14 British drifters operating in the Adriatic; they are driven off by British cruisers *Dartmouth* and *Bristol*, French and Italian destroyers, and Italian airmen, who sink one cruiser outside Cattaro.
" 26.— British hospital ship *Dover Castle* torpedoed in Mediterranean.
" 29.— British Admiralty announces sinking of auxiliary cruiser *Hilary* by torpedo in North Sea. British torpedo-boat sunk in collision.
June 2.— British transport *Cameronian* sunk by submarine in Eastern Mediterranean.
" 5.— Commodore Tyrwhitt, with squadron of light cruisers and destroyers engages six German destroyers in running fight and sinks the S-20.
" 13.— British armed merchantman *Avenge* torpedoed in North Sea.
" 27.— French armored cruiser *Kleber* strikes mine off Point Saint Mathieu.
July 9.— British battleship *Vanguard*, dreadnought class, destroyed by internal explosion while at anchor.
" 17.— British Admiralty announces that British light squadron has sunk four and captured four German merchant craft off Holland.
" 30.— British armored cruiser, *Ariadne*, torpedoed and sunk.
Aug. 14.— British destroyer sunk by mine in the Channel.
Sept. 1.— British light forces sink four German minesweepers off the coast of Jutland.
" 9.— German submarine U-293 interned at Cadiz.
Oct. 2.— British armored cruiser, *Drake*, torpedoed off the north coast of Ireland.
" 5.— Official Washington bulletin announces wreck, on Aug. 2, of the German raider, the *See Adler*, on Lord Howe Island.
" 7.— German submarine U-293 escapes from Cadiz.
" 15.— British Admiralty announces the sinking by torpedo with the loss of all hands of the mine-sweeping sloop *Begonia* and the auxiliary cruiser *Champagne*.
" 16.— American destroyer torpedoed but reaches port.
" 17.— British destroyers *Mary Rose* and *Strongbow*, convoying 12 Scandinavian merchantmen, attacked by two German raiders off Shetland and sunk with nine of the escorted vessels.
" 17.— American transport *Antilles*, homeward bound, torpedoed with a loss of 67.
Oct. 18.— Russian battleship *Slava* sunk by gunfire in the Gulf of Riga.
" 20.— British submarine in Gulf of Riga sinks German transport and torpedoes a dreadnought.
" 23.— British destroyer sunk in collision.
Nov. 2.— British sink German auxiliary *Marie* and 10 armed patrol ships in the Cattegat.
" 5.— American converted yacht *Alcedo* torpedoed.
" 14.— British destroyer and monitor sunk off Jaffa, Palestine.
" 17.— Light cruiser fight off Heligoland; Germans lose patrol boat and one cruiser is crippled.
" 19.— American destroyer *Chauncey* sinks in collision in war zone.
Dec. 6.— United States destroyer *Jacob Jones* torpedoed off Scilly Isles.
" 9–10.— Italian destroyers penetrate harbor of Trieste and torpedo the Austrian battleship *Wien*.
" 17.— Sir Eric Geddes announces loss of 11 vessels in a British convoy in the North Sea.
" 29.— British Admiralty announces the sinking of three British destroyers.

1918

Jan. 7.— Mutiny among the German sailors at Kiel naval base.
" 9.— British destroyer *Raccoon* strikes a rock off the coast of Ireland and goes down with her crew of 105.
" 12.— Two British torpedo boat destroyers on Scottish coast lost with all on board but one.
" 20.— The ex-German cruiser *Breslau* sunk, and the *Goeben* damaged off Imbros.
Feb. 5.— American steamer *Alamance* torpedoed, six of crew lost.
" 6.— *Tuscania*, American transport, torpedoed off the coast of Ireland, 101 lives lost.
April 14.— Announcement of probable sinking of the United States collier *Cyclops*. This vessel's fate remains one of the greatest mysteries of the war.
" 22.— British carry out naval raids at Zeebrugge and Ostend. They blocked the entrance to the Bruges Canal by sinking vessels filled with concrete. The Ostend Harbor was blocked.
May 9.— A second raid upon Ostend was carried out by British naval forces. The old *Vindictive* was filled with concrete and sunk partly athwart the ship channel.
" 31.— United States transport *President Lincoln* sunk; four officers and 22 men lost.
June 2.— The schooner *Edward H. Cole* sunk by a submarine off the New Jersey coast.
July 7.— British naval air forces bombard Constantinople.
" 11.— United States steamship *Westover* sunk by a submarine.
" 19.— American cruiser *San Diego* sunk off Fire Island.
" 21.— German submarine sinks three barges off Cape Cod.
Aug. 7.— Mutiny of German sailors reported from Wilhelmshaven.
Nov. 7.— German naval crews revolt at Kiel and Hamburg. The German navy passes into the control of revolutionaries.
" 21.— German fleet surrenders to the British.

1919

June 21.— German crews sink most of the German fleet at Scapa Flow.

7. COLONIAL CAMPAIGNS.

1914

Aug. 23.— Tsing-tau bombarded by the Japanese.
" 26.— Allies conquer Togoland.
" 29.— Samoa captured by New Zealand forces.
Sept. 11.— Australian expedition captures New Guinea and the Bismarck Archipelago Protectorate.
" 27.— German Southwest Africa invaded by General Botha.
Oct. 28.— De Wet's Rebellion in South Africa.
Nov. 5.— Cyprus annexed by Great Britain.
" 7.— Tsing-tau falls to the Japanese.
" 21.— Basra, on Persian Gulf, occupied by British.
Dec. 8.— De Wet's Rebellion suppressed.
" 17.— Egypt proclaimed a British Protectorate, and a new ruler appointed with the title of Sultan.

1915

April 26.— Allied troops land on the Peninsula of Gallipoli.
May 12.— Union of South Africa troops under Botha, occupy Windhuk, capital of German Southwest Africa.
June 3.— Amara, on Tigris, captured by British.
July 15.— Conquest of German Southwest Africa completed.
Dec. 1.— General Townshend, forced to retreat from Ctesiphon, retires to Kut-el-Amara.
" 19.— British forces withdrawn from Anzac and Suvla Bay.

1916

Jan. 8.— Evacuation of Gallipoli completed.
Feb. 18.— Kameroon conquered.
April 24.— Rebellion in Ireland.
" 29.— General Townshend surrenders to the Turks at Kut-el-Amara.
May 2.— Irish rebellion suppressed.
June 21.— Grand sherif of Mecca takes Mecca, Jeddah and Taif.
Sept. 4.— Dar-es-Salam, German East Africa, surrendered to the British.
Dec. 21.— British occupy El Arish, Sinai Peninsula.

1917

Feb. 24.— British capture Kut-el-Amara.
March 11.— Bagdad captured by the British.
April 23.— British occupy Samarra station, north of Bagdad.
June 29.— General Allenby takes command of the British forces in Palestine.
Sept. 28.— British rout Turks at Ramadie on the Euphrates.
Oct. 31.— British take Beersheba.
Nov. 7.— British take Gaza.
" 17.— Turks evacuate Jaffa, which is thereupon occupied by the British.
" 18.— Sir Stanley Maude dies in Mesopotamia.
" 24.— General Marshall takes command of British forces in Mesopotamia.
Dec. 1.— German East Africa conquered.
" 9.— British take Jerusalem.

1918

Feb. 20.— British occupy Khan Abu Rayot, 14 miles north of Ramadie.
" 21.— British take Jericho.
March 9.— British occupy Hit, on the Euphrates.
April 5.— Japanese and British marines land in Vladivostok.
" 27.— Kifri, north of Bagdad, captured by the British.
June 14.— Turks occupy Tabriz, Persia.
Sept. 19.— Allenby breaks Turk line in Palestine between Rafat and the sea.
" 22.— Allenby advances beyond Nazareth.
" 23.— Acre and Es Salt, Palestine, taken by British forces.
" 26.— Amman, Palestine, occupied by the British.
Oct. 1.— Damascus falls to British.
" 22.— Turks evacuate Tabriz.
" 26.— Aleppo occupied by the British.
" 30.— Turk forces on Tigris surrender.
" 30.— Armistice granted to Turkey.
Nov. 25.— Surrender of last remnant of the German forces in East Africa.

8. RULERS, PRESIDENTS AND PRINCIPAL STATESMEN OF THE BELLIGERENT COUNTRIES DURING THE WAR.

United States.

President: Woodrow Wilson.

William Jennings Bryan.
Robert Lansing.
William Gibbs McAdoo.
Carter Glass.
Newton Diehl Baker.
Thomas Watt Gregory.
A. Mitchell Palmer.
Albert Sidney Burleson.
Josephus Daniels.
Edward M. House.
James W. Gerard.
Walter Hines Page.
David R. Francis.
M. T. Herrick.
William G. Sharp.
Theodore Roosevelt.
Elihu Root.
William H. Taft.
Herbert Hoover.
Henry C. Lodge.
Thomas S. Martin.

Great Britain.

Reigning Sovereign: George V, King and Emperor.

H. H. Asquith.
D. Lloyd George.
Viscount Haldane.
Sir Edward Grey.
Earl Kitchener.
Winston Churchill.
Earl Curzon.
Marquis of Lansdowne.
A. Bonar Law.
Austen Chamberlain.
Arthur J. Balfour.
Lord Robert Cecil.
Earl of Selborne.
Sir F. E. Smith.
Arthur Henderson.
G. N. Barnes.
J. C. Smuts.
Viscount Milner.
Sir Eric C. Geddes.
Lord Rhonnda.
Sir Auckland C. Geddes.
Sir Edward Goschen.
Lord Northcliffe.
Lord Cunliffe.
Lord Reading.
Louis Botha.
Sir Robert Borden.
John Redmond.
Premier Hughes of Australia.
Premier Massey of New Zealand.

France.

President: Raymond Poincaré.

Georges Clemenceau.
M. Viviani.
Alexandre Ribot.
Leon Bourgeois.
Theophile Delcassé.
General Maunoury.
Alexandre Millerand.
Aristide Briand.
Jules Guesde.
M. Emile Combes.
General Gallieni.
M. Painlevé.
Albert Thomas.
Stephen Pichon.
M. Klotz.

Italy.

Reigning King: Vittorio Emanuele III.

Antonio Salandra.
Antonino San Giuliano.
Sidney C. Sonnino.
Vittorio E. Orlando.
Nitti.
Gabriel D'Annunzio.

Russia.

Reigning Emperor: 1914–17 Nicholas II, Emperor of all the Russias.

S. D. Sazonoff.
General Sukhomlinoff.
Vice-Admiral Grigorovich.
Stürmer.

Belgium.

Reigning King: Albert.

Ch. de Broqueville.
M. J. Davignon.
H. Carton de Wiart.
M. A. Hubert.
A. van de Vyvere.
P. Segers.
M. Vandervelde.
Cardinal Mercier.

Portugal.

President of the Republic: Dr. Manoel Arriaga.

Bernardino Machado.

On 27 May 1915 Arriaga resigned the Presidency and on the 29th Theophilo Braga was elected Provisional President.

On 6 Aug. 1915 Machado was elected President of the Republic.

Serbia.

Reigning King: Peter I.

N. P. Pashitch.
D. Stephanovitch.

Montenegro.

Reigning Sovereign: Nicholas I.

E. Popovitch.

Greece.

Reigning Sovereign: Konstantoins, succeeded 12 June 1917 by Alexandros.

Eleutherios K. Venizelos.

Japan.

Reigning Sovereign: Yoshihito.

Count Okuma.
Baron Kato.
General Oka.
Admiral Yashiro.
Viscount Oura.
M. Ozaki.
Ichiki.
Taketomi.
Baron Ishii.

Germany.

Reigning Emperor and King: William II.

Crown Prince Frederick William.	President Herr Havenstein.
Dr. von Bethmann-Hollweg.	Dr. Michaelis.
Herr von Jagow.	Count von Hertling.
Herr Delbrück.	Prince Max of Baden.
Dr. Karl Helfferich.	Maximilian Harden.
Admiral von Tirpitz.	Count von Reventlow.
Admiral von Capelle.	Matthias Erzberger.
Herr Dr. Lisco.	Count Brockdorff-Rantzau.
Herr Kuhn.	Johann von Bernstorff.
Friederich von Pourtalès.	Prince Lichnowsky.
Herr Dr. Solf.	Dr. von Kuehlmann.

Austria-Hungary.

Reigning Sovereign: Franz Josef I, Emperor of Austria and King of Hungary, succeeded December 1916 by Emperor Karl.

Count Leopold Berchtold.	Stephen Baron Burian.
Count Stephen Tisza.	Dr. Karl Renner.

Bulgaria.

Reigning King: Ferdinand.

M. Radoslavoff.	M. Blakoff.
Toncheff.	Christo Popoff.
M. Pecheff.	

Rumania.

Reigning King: Carol I, succeeded 11 Oct. 1914 by Ferdinand I.

T. Majoresco.	A. Constantinesco.
T. C. Bratianu.	N. G. Cantacuzene.
A. Marghiloman.	A. Radonici.
Take Jonescu.	

Turkey.

Reigning Sultan: Mohammed V, succeeded 3 July 1918 by Mohammed VI.

Prince Said Halim Pasha.	Enver Pasha.
Ibrahim Bey.	Jemal Pasha.
Halil Bey.	Talaat Bey.

4. FIGHTING STRENGTH OF THE NATIONS. Man-power.— The peace armies of the seven great powers before the opening of the Great War in 1914 totaled less than 4,500,000, or about 12½ per cent of those finally engaged. If to these be added the trained reserves, then the available armies figure over 18,000,000, or nearly one-third of the final total of combatants and about that number were enrolled early in 1915. The best estimates obtainable are placed below.

THE ARMIES OF 1914.

COUNTRIES	Standing army	Trained reserves	Untrained reserves
Austria	472,716	1,347,284	2,700,000
Germany	800,000	3,200,000	3,000,000
Great Britain	182,000 English 316,000 Colonial	477,000	3,500,000
France	750,000 116,000 Colonial	3,151,000	1,622,000
Russia	1,284,000	4,687,000	6,000,000
Italy	251,000	1,000,000	1,350,000
United States	130,000	70,000	.....
Totals	4,301,716	13,932,284	18,172,000

If to these we add 117,000 for Belgium's brave little army, 500,000 for Rumania and Serbia, and 500,000 for the smaller nations that came in later, we have a grand total of 5,500,000 for the armies before the war, on a peace footing. This total is an under-statement of the forces ready to fight because Germany had prepared, and so had Austria-Hungary, and Russia was mobilizing very fast, so that these three very probably had another 5,500,000 under arms. France was not generally credited at that time with the totals here given, and she had probably not a fourth of them immediately available at the time of Germany's declaration of war, but they were in the service, and brought to duty with remarkable celerity. In supplies of ammunition, the armies of the Central Powers were far the best equipped, and it was this superiority that enabled the Central Powers to take and hold the lead in the war for three years. Germany's trained reserves were actually in her army at the time of the Declaration of War, and by the time fighting was really begun she had 4,500,000 men in the ranks. Russia did the same thing, and within two months had as many or more troops than Germany; but they were not as well positioned or as well commanded, and hence not nearly as effective. And further, the supplies of ammunition behind them were inferior. By 1 Jan. 1915, France had 4,800,000 men enrolled, and Great Britain about 500,000. Austria's total at the same period was over 2,000,000, so that 1915 opened with 11,000,000 men in the field for the Allies and about 8,000,000 for the Central Powers. Most of these were raised by conscription, though Great Britain adhered to the volunteer system for many months, and there were also many volunteers in the French and Belgian armies. The development of the armies in the leading nations is here summarized.

France.— Starting with 19 army corps and 800,000 men, France rapidly enrolled her reserves and undertook intensive training of more men, raising her total to 5,000,000 within six months. The new recruits were arranged in four classes, and taken in as they were ready, and the army strength at its greatest was 6,300,000. More were enrolled, but the losses prevented the number from increasing.

Great Britain.— England's land forces at the outset were trifling, less than 200,000 being immediately available. By the fall of 1915 she was able to place in France 1,000,000 men, but it was not until the summer of 1917 that she had 2,000,000 men in the fighting area. There was severe criticism of the slowness, and a new Military Service Act was passed early in 1916, which provided for systematic conscription and development of the army. In January 1918, the total of British and colonial troops was raised to 7,500,000, of which England contributed 60 per cent, Scotland 8 per cent, Wales 3.7 per cent, Ireland 2.3 per cent, while the other 26 per cent was divided between Canada, India, Australia, etc.

Italy.— Having had time to prepare, Italy came into the war with her standing army of 515,000, plus 245,000 mobile militia and 340,000 territorial militia. There was rapid development and training, so that by the autumn of 1917 the Italian army totaled 3,500,000. This was gradually increased to 5,500,000, her greatest total. In the last year of the war her losses were enormous, the wounded, dead, missing, and prisoners depriving her of over 2,000,000, so that at the time of the armistice she had but 2,800,000 under arms.

Russia.— The vast population of Russia was thoroughly militarized in the years preceding the war, and it is claimed that 13,000,000 men were more or less trained. At least 5,000,000 were available at the outbreak, and early in 1917 it is stated that almost 11,500,000 were credited to the army. This number was steadily reduced,

the losses in both East Prussia and on the Austrian front being enormous, and probably not more than 5,000,000 were under arms at the time of the Russian debâcle.

Belgium.— Brave little Belgium, which bore the first onslaught alone, started the war with 117,000 troops, increased to 137,000 by volunteers within two months, and was gradually swelled thereafter to 180,000 in the autumn of 1917, and 267,000 at the close of the war.

Serbia.— No country suffered more than unhappy Serbia. Starting with a few hundred thousand troops, she was so beset that soon one-fourth of her population was mobilized, and over 700,000 men put in the field. This meant practically all the active men of the nation. In the first two years there were 171,000 battle deaths in this little army, and at the close only 150,000 men remained to return to rehabilitate their devastated territory.

Greece.— The Greeks had 230,000 men in their army at the date in 1917 when they entered the war, and about as many at the close, their losses being 87,000.

Portugal and Japan.— Portugal mobilized 750,000 men and Japan had a standing army of 800,000, but neither of these saw much service.

Turkey.— Before the war Turkey had compulsory military service, and an army of over 100,000. She first mobilized about 210,000, and later her war strength was brought up to 750,000, with 150,000 more in training. The casualties were severe, totaling about 400,000, and about 60,000 deserters added brought down the army at the close to about 400,000 men.

Rumania.— By means of conscription Rumania came into the war with about 290,000 troops, who were reorganized under French direction and increased to about 400,000 at the highest total.

Bulgaria.— The 36 regiments of Bulgaria presented a war strength of 280,000, increased from about 60,000 on a peace footing.

United States.— Entering the war in April 1917, with only 200,000 troops, the United States by volunteers and by selective draft had over 4,000,000 men in the service when the armistice was signed. Over 2,000,000 troops were on the fighting ground within 18 months, and their efficiency, and the well-known fact that they were continuing to come in, trained and fresh, at the rate of 70,000 a week, had much to do with the Germans' sudden decision to give up the struggle.

Germany.— The following table affords a clear idea of the German forces, and the time and manner of their increase:

GERMAN ARMIES.

1914.	August	4,500,000
	Additions	800,000
	Class 1914	450,000
1915.	Landsturm	1,100,000
	Class 1915	450,000
	More Landsturm	150,000
	Class 1916	450,000
	Wounded returned	300,000
1916.	Wounded returned	200,000
	Landsturm, second	450,000
	Class 1917	450,000
	Wounded returned	300,000
	Class 1918	450,000
1917.	Wounded returned	150,000
	Class 1919	450,000
	Wounded returned	100,000
1918.	Class 1920	250,000
	Total enrolment	11,000,000

Austria-Hungary.— Germany's ally had nearly 3,000,000 men in the field before the war was six months old. She trained and mobilized men steadily until near the end, enrolling a total of 6,500,000. Her losses were so stupendous that she was credited with only 1,500,000 at the close.

The grand total of men enrolled in the various armies is shown under the sub-heading WAR CASUALTIES, being over 56,000,000, of whom 7,553,600 were slain, 16,937,000 wounded and 6,729,000 missing or prisoners. Making allowance for the wounded who returned to fight, there were about 30,000,000 under arms at the close, as against 19,000,000 at the beginning of 1915.

Armaments of the Belligerents.— The Great War was fought mainly with established types of weapons and arms, machine guns and rifles, field pieces, howitzers, etc., doing most of the work of throwing deadly metal and explosives. The difference as compared with earlier wars lay largely in the methods of attack and defense, and the vastly increased amount of powder and explosives employed. The aircraft added a scouting feature which did away with the value and importance of cavalry, that figured so prominently in earlier conflicts. The anti-aircraft gun was the one novel firearm used to any degree. The use of bursting shells instead of solid shot was inaugurated at the outset by the Germans, and proved so effective that the large howitzers were developed as fast as possible. The tank was the first successful radical fighting machine introduced on the Allied side, and did much to offset the advantages won earlier by the Germans from the illicit use of gas. These weapons and mechanisms are all described elsewhere, but it is desired to record here the numbers and use made of them in the war.

The production of artillery by the three leading nations among the Allies is a fair guide for the artillery employed, since the amount of manufactured and unused artillery at the close would about offset the amount available at the outset by France and Belgium. This production, up to the close of the fighting, was 57,000 gunbodies and complete artillery units; and 6,500,000 machine guns and machine rifles and ordinary rifles. The details follow of the three nations' production during the war:

Gun-body production during the war:	
Great Britain	11,852
France	19,492
United States	4,275
Total	35,619
Complete artillery units:	
Great Britain	8,065
France	11,056
United States	2,005
Total	21,126
Artillery ammunition, unfilled rounds:	
Great Britain	138,357,000
France	156,170,000
United States	38,623,000
Total	333,150,000
Artillery ammunition, complete rounds:	
Great Britain	121,739,000
France	149,827,000
United States	17,260,000
Total	288,826,000

While the United States figures are very much lower than those of the other Allies, it should be remarked that, at the time of the armistice, the United States had caught up, and was producing as many shells and explosives as either of her Allies.

Machine guns and machine rifles:	
Great Britain	181,404
France	229,238
United States	181,662
Total	592,304
Ordinary rifles:	
Great Britain	1,971,764
France	1,416,056
United States	2,506,742
Total	5,894,562
Rounds of rifle and machine ammunition:	
Great Britain	3,486,127,000
France	2,983,675,000
United States	2,879,148,000
Total	9,348,950,000
Smokeless powder:	Pounds
Great Britain	294,290,000
France	343,950,000
United Sates	632,504,000
Total	1,270,744,000
High explosives:	
Great Britain	771,122,000
France	701,438,000
United States	329,762,000
Total	1,802,322,000

The United States production of armament, etc., also included 1,975,000 helmets, 666,000 pistols and revolvers, 1,895 tractors, 366 tanks, 1,547 locomotives, 20,023 railway cars, 37,607 motor trucks and 6,981 ambulances.

The total of ordnance delivered to the American Expeditionary Forces from the home country and the Allies was

75 mm. guns	2,031
4.7 in. guns	64
155 mm. howitzers	747
5 in. seacoast guns	26
6 in. seacoast guns	72
155 mm. guns	242
8 in. howitzers	237
9.2 in. howitzers	37
75 mm. anti-aircraft guns	78
14 mm. magazine guns	8
Other guns	3
Total artillery	3,545

The German infantry used the Mauser magazine rifle mostly, and Austria and Turkey employed the Mannlicher. The Germans used both light and heavy howitzers, introducing the largest known, with great distance capacity. The Austro-Hungarians used a field howitzer of 1,000 pounds, throwing a 30-pound shell, and a much lighter mountain howitzer, throwing a shell of 10.6 pounds. France employed the Lebel magazine rifle, and howitzer batteries of four and 6.2 inches. England manufactured the Lee-Enfield rifle; their regular army had field pieces throwing 13-pound and 18-pound shells, and howitzers of 40-pound and 60-pound capacity. All these weapons are described under other headings in this Encyclopedia.

CHARLES H. COCHRANE,
Editorial Staff of the Americana.

5. MILITARY OPERATIONS ON THE WESTERN FRONT. 1. General Strategy and Numbers.— Viewed as a whole the World War ended as it began, in an attempt to take Paris. That was in accordance with the German war plan, made many years before and taken out of the general staff's pigeon-holes in 1914. The plan failed to work as expected and four years of bitter fighting followed. Early in 1918 Russia had been worn down to surrender and Germany threw herself on her exhausted enemies of the western front to overwhelm them. She herself was tired almost to the point of collapse, but she had made a magnificent fight, won many local victories, and her spirits were high. Another thrust and victory! She made it as she made the first, pushing again down to the Marne. She failed as she first failed, in nearly the same place, and in the same kind of a blow on the right flank of the great German salient. Her second defeat was inflicted by the same man; for it was Foch who gave the decisive blow at the first battle of the Marne, and it was he who won the victory of 1918. Between the first and second battles of the Marne were fought many fierce battles in the West, and they had their places in the final victory. The losses entailed on the Germans broke their recuperating power and made it impossible to withstand the Entente Allies and the United States in 1918. The history of the operations on the western front is the history of these two great battles and of the four years of thrust and counter-thrust that came in between.

In the beginning Germany was better prepared for war than any of her opponents. Her system of military training was believed to be as nearly perfect as human skill could make it. The general staff was excellent, the large number of minor officers were well trained and spirited, the private soldiers were obedient and attached to their officers for the most part. The whole army had confidence in itself and was inspired by traditions of German military glory. For many years the whole nation had lived for the day that was now on them. Hardly a soldier in the army but knew that there were to be strong thrusts at France first and then at Russia, and they all believed that the war would be won quickly. Besides these considerations the army was abundantly furnished with munitions and supplies. Close students of military science had observed that the machine gun was a wonderful new instrument of defense and the army was well supplied with it. They also knew that Belgium and France were counting on the protection of their barrier fortresses, and for taking the forts they had developed great howitzers, they and their allies the Austrians, which fired from a safe distance would destroy any fort in Europe. They had accumulated, also, a vast supply of high explosive shells. They had developed tractors for moving heavy guns which hitherto had been thought immovable. They had prepared a vast number of motor trucks for moving troops quickly on the excellent roads of Belgium and France. In aviation they had miscalculated. The Zeppelin was to prove a failure against the airplane, but their opponents had not come thoroughly to appreciate the military value of airplanes. The Germans were the best prepared of the belligerents, and they had chosen the time and place for opening the war.

The French army was well trained and there was an excellent general staff. The spirit of the rank and file was as good as the spirit of the Germans. If one had confidence in victory, the other had the memory of 1870 to wipe out. The Frenchman fought for his country's existence. If the German won, the fate of France was sealed. In munitions the French were at a disadvantage with the Germans. They were well supplied with an excellent light field gun, the celebrated 75 mm., and had a sufficient quantity; but they were lacking in heavy guns and in high explosives. The British, whose interest in defense had centred chiefly in their navy, had a small army well equipped in the manner that was considered proper before the war between China and Japan. Like the French they were poorly supplied with machine guns and high explosives. So far as equipment was concerned, the German and Austrian armies at the beginning of the war had an advantage over the armies of their opponents.

As to numbers of trained soldiers who could be assembled quickly, Germany and Austria had a similar advantage. In the German first line were 1,500,000 men, with a second line of an additional 1,000,000. Behind these were reserves amounting to 4,500,000, giving her a total strength of 7,000,000. It is believed that she threw into France and Belgium by the middle of October considerably more than 2,000,000 men. Austria's first-line army contained about 1,000,000 men increased by 1,500,000 by the middle of October. In all she was able to raise about 4,000,000 men. Her troops, however, were of various nationalities and some of them were not to be trusted in fighting against Serbians and Russians.

On the side of the Entente the strongest military power was France. She had about 1,500,000 men in the first line and 500,000 in the second line with 2,000,000 in reserve. Most of her first line troops had seen actual service in Africa, which proved of great value in the first months of the Great War. The regular army of Russia numbered about 1,000,000 with at least 3,000,000 in reserve. She could, of course, call up a vastly larger number from her untrained population, but she did not have the equipment for them, nor could she expect to import it in sufficient quantities after Germany closed the Baltic, which the German fleet would undoubtedly do as soon as war was declared. The only other avenues of importation into Russia were by the Black Sea, which Turkey might interrupt; through Bulgaria, which would be closed if Bulgaria joined Germany in the war; through Archangel, connected with the interior by a single track railroad; and by way of Vladivostok, whose long distance from the seat of war made it but a slender reliance. As for Great Britain, her regular army numbered 250,000 well-trained men. She had, also, nearly 700,000 militia in various stages of training. By the middle of October she had 150,000 men in the fighting area in France. The Belgian army numbered 263,000 on paper, but half of them were needed to man the forts, which were the country's main reliance for defense, and the remainder were not in a good state of training. Serbia had an army of 250,000 men, with as many more who could be called into the field. Her hardy population furnished superior soldiers, as their conduct in the Balkan War had shown. She had an excellent general staff, but her weakness lay in her lack of artillery and other equipment.

Germany's grand plan of operations, often discussed before the war began, was to overwhelm France in a sudden and furious attack; and she thought her superior strength would make this an easy task. She considered Russia a slight menace for some months after the campaigns opened, because of the expected slowness of Russian mobilization. She thought that 250,000 men placed along the East Prussian and Polish frontier would hold back any army Russia could send against her territory for several weeks after the war began. She assigned to Austria the duty of attacking Russia from Galicia, believing that such an attack would keep the tsar busy until the work was done in France. This plan came to its defeat at the battle of the Marne.

In the long series of trench engagements that followed in France and Belgium two factors come prominently into view. France had to throw in her fighting force as freely as a sense of necessary economy of man power permitted, while Great Britain strained her energy to raise and train armies to take over a due proportion of the battle-line. Both nations had to set to work in the most industrious manner to manufacture cannon, machine guns and aircraft to make up for the deficiency with which they began the war. There were many months during which their troops held trenches without adequate weapons of defense, exposing their unprotected bodies in the most heroic manner while the industries of France and Great Britain worked day and night to produce the vast stores of munitions that were needed. In meeting this emergency they were aided by the British command of the sea, which allowed the allies to buy freely in neutral countries. It had long been an accepted principle of international law that neutrals could sell supplies to a belligerent, provided the same facilities were extended to all parties to the war. To have reversed this rule during the war would have been an act favorable to Germany, and the Entente would have been justified in pronouncing it a violation of neutrality.

Following her grand plan, therefore, Germany concentrated her armies against France until her forces exceeded those of her opponents in that region as seven exceeds four. Her superiority in heavy cannon and other weapons, as well as in rapid means of transport, was even greater. Her supreme command thought that her success was assured.

France had made preparations for invasion on her eastern frontier. A series of strong forts, according to prevailing ideas of military science, had been erected from the Swiss border to Longwy, at the southern bounds of Belgium. It comprised the fortresses of Belfort, Epinal, Toul, Verdun and Longwy, with many outlying forts and battery positions. A fortress, in the sense here used, is a strong central position with outlying forts at a distance of from four to eight miles, so placed that their guns can cover most of the intervals between the forts themselves. In these intervals trenches were constructed to be held against infantry attacks. The forts were generally made of strong concrete walls and contained cannon whose range was about six miles. Between the great for-

tresses along this line, 150 miles long, were many smaller forts and well-defended ridges, so that the French had a right to feel that their eastern border was well defended.

But north of Longwy the line of defense was weaker. Here began the border of Belgium, which France had long believed would protect her against Germany. It is true that there were many indications that Germany would not respect Belgian territory nor the neutrality of Luxemburg, the southwest corner of which touched France on a border of 15 miles, just east of Longwy. She expected that fortress to give her security in this quarter, if Germany, violating international law, massed troops in that neutral duchy. As to Belgium, it was believed that its people would resist a German attack until the French could send help, but if that failed there was a fortified line just southwest of the Belgian frontier in which were the fortified towns of Lille, Maubeuge and Mezières, the second being very strong. The line connected with the Longwy area along the high ground northeast of the Meuse, but west of Lille it was in the air. It was not a strong line, but the French thought it would derive additional strength by the support of the Belgian fortresses of Liége and Namur.

In considering possible lines of defense the French High Command had to choose between looking for the enemy either along the eastern border or through Belgium. They considered the former the more probable, and their best efforts of defense were spent there. Probably for this reason the Germans chose the latter as the surest way to finish France in a quick blow; for they could never hope to penetrate the eastern line of fortresses in the six weeks during which they expected to crush their western foe.

Now the Belgian area of operations is like this: Draw a straight line on the map from Longwy to the Dutch border on the north and the distance is 90 miles. For the first 70 miles from Longwy the line crosses two broken, forest-clad and rather thinly populated regions, the southern Ardennes and the wooded valley of the Meuse, the northern border of the latter being the Meuse River from Namur to Liége, where it turns northward to the Dutch border by way of Maestricht. This wooded region is not favorable for manœuvring large armies, although the Germans proved that it was possible to send them through its roads in order to concentrate heavy forces in the region beyond. North of this wooded region lies the Belgian plain, thickly populated in 1914 and devoted to many kinds of industry in which lived a body of skilled workers. North of the Meuse Valley this plain runs in a narrow neck, 20 miles wide, as far east as the German border near Aix-la-Chapelle. It is crossed by the Meuse north of Liége, and the river, if well fortified, would make a good line of defense. The Belgians, however, had done much to defend Liége, but they did nothing to hold the river bank. Thus it was possible for an invading army that was in superior force to cross the river out of reach of the guns of Liége, sweep around the town, and take it by siege operations. The Germans, when they had decided to attack through Belgium, proposed to enter Belgium through this gateway, mass their troops in the plain, sweep around to the west of Namur until the place was either taken or masked, and then pour down past Lille, Peronne and Amiens to the vicinity of Paris. If the French tried to hold Maubeuge, or the country south of it, the superior German army would encircle them from the west and repeat the tactics by which great French armies were captured in 1870 at Sedan and Metz.

The plan of the French High Command was as follows: It would concentrate the best troops on the eastern front. If the Germans met them there great battles on equal footing would follow. The French wanted nothing better than to meet the foe as equals. If, however, the Germans came through Belgium they would be checked by the Belgians, who, reinforced by troops from France, would hold back the German advance at Liége, Namur and Maubeuge, while the main French forces would break through the German defenses into Alsace and Lorraine, seize the Rhine and produce consternation in Germany itself. We shall see what befell this plan.

2. Serbia Leads the Fighting.— Serbia was the incidental cause of the war which Germanic and Slavic rivalries brought on. The Austrian ultimatum of 23 July 1914, if accepted, implied the subordination of Serbia to the plans of the Teutonic empires. It also meant the defeat of Russian prestige, already badly damaged when Austria established definite sovereignty over Bosnia in 1908. Serbia chastised and humiliated, the idea that Russia was the protector of the Slavic Balkans would vanish into air. Russia was thus bound by her best interests to help Serbia; and Serbia, if she did not mean to live the rest of her days as a crouching figure at the feet of Austria, awaiting the fate of Bosnia-Herzegovina, must now stiffen her back before the big bully. She showed herself willing to stiffen it; for bravery was one of the cardinal virtues of her people, who in other respects had many shortcomings. Through her borders was seen the spirit of grim determination to meet the crisis of her history in the manliest way. The suppressed Slavs of Austria, whose resentment of Hapsburg rule had brought on the dark deed at Sarejevo, thrilled, also, at the thought of helping Serbia against the tyrant who had wronged them.

It was 28 July when Austria-Hungary declared war on Serbia. She probably had plans for a quick invasion of the country; but the rapid mobilization of Russia on the Austrian border made it unwise to attempt to put them into operation at the moment. She contented herself with establishing a protecting force along the border, waiting for a good opportunity to humble the Serbians. But her gallant foes were not disposed to allow her to take her own time. They forced the fighting at once, being too wise to allow the opportunity to pass unused when their enemy was fully engaged in other quarters.

The kingdom of Serbia was divided from Austria-Hungary by three rivers: the Danube on the north from the Rumanian border to Belgrade, the Save on the north also, from the northwestern corner of the kingdom to Belgrade, where the Save unites with the Danube, and the Drina on the west from near the boundary of Montenegro to its junction with

the Save at Racha. The capital, Belgrade, was so exposed to the enemy that it was not defended seriously, the government being moved to Nisch soon after war was declared. The Serbian High Command had determined that the first thing to be done was to drive back the Austrian forces in Bosnia-Herzegovina and give the Slavic inhabitants an opportunity to join the armies fighting against their oppressors. Serbia's policy was to hold the northern frontier, protected by the Danube and Save rivers, with as few soldiers as were needed there and to concentrate the remainder of her armies on the Drina, crossing it, if possible, in order to liberate the Bosnians. She had no fear of trouble on her western front, where Montenegro, Slavic in spirit, was ready to declare war against Austria, and did declare it on 7 August. On the east was her old enemy, Bulgaria, built up in recent years as a Teutonic friend and soon to be an open ally. If Bulgaria kept out of the war, Serbia, with the support of gallant little Montenegro and the friendly neutrality of Greece, would probably be able to defend her country, so full of mountain passes, from general invasion. The weakness of her situation was found in two circumstances: (1) A campaign in Bosnia, if successful, could hardly be maintained by so weak a state as Serbia. The Slavs there might well hesitate, therefore, to rise against Austria until it was evident that Russia had weakened her very materially in operations in other fields; (2) Bulgaria was a menace. Filled with hatred for the conduct of Serbia in the Balkan wars, emboldened by the idea that she was to become the Germany of the Balkans, she was ready to swoop on her ancient enemy when the time of crisis left that enemy in no state of security.

In the first days of the war Austria assembled two armies near Belgrade, one to the east and one to the west. They both tried to cross the rivers into Serbian territory but were driven back by the Serbs with severe losses. Then the scene of combat shifted to the Drina at a point opposite the Bosnian capital, Serajevo, where the Serbs hoped to initiate their campaign in Bosnia. Here a combined Serbian and Montenegrin force crossed the border and won initial successes; but it was impossible to continue the campaign on account of a counter movement which the Austrians made on the Save, 40 miles west of Belgrade. Protected by a severe bombardment they threw a heavy column across the river at Shabatz and occupied the town on 16 August. The Serbs concentrated quickly and beat the enemy in a severe battle on the 17th.

The plans of the Austrians had been cleverly made. The northwestern corner of Serbia, between the Drina and the Save, is a peninsula whose neck is 25 miles wide. Opposite Shabatz is the little river Jadar, and on the 17th its banks were occupied by 80,000 Austrian troops that had crossed from the Bosnian side of the Drina. This force was slightly behind the Serbs concentrated at Shabatz and stood in a position to close in and surround them. The plan was defeated by the courage and alertness of the Serbian crown prince and the able staff that assisted him. Turning from the battlefield of Shabatz immediately after his victory over the first body of Austrians, he moved on the army that was lying on each side of the Jadar on the 18th. In a four days' battle he completely routed it, driving it back across the Drina and taking a large number of prisoners and guns. By these two brilliant victories the crown prince freed his country of her invaders and gave them such a smarting blow that they could not resume the offensive at once.

The invasion of Bosnia, suspended to meet the attacks at Shabatz and the Jadar, was now resumed. Although they were handicapped by lack of materials the Serbs advanced slowly and took the Bosnian town of Vishegrad, 10 miles within the enemy's territory, on 14 September. This success prompted Austria to renew her efforts in the northwestern angle of Serbia. Concentrating about 100,000 men opposite the little river Jadar she crossed at three places between Jania and Liubovia. The Serbs again attacked, and with their usual vigor. The first and second columns were driven back into Bosnia, but the third managed to fortify the bridgehead at Liubovia, where they remained. These operations, known as the battle of the Drina, occurred between 8 and 17 Sept. 1914.

Thus far Austria's best troops had been used against Russia in Galicia, and the operations against the Serbs had been left to troops of the second line. By the end of October the Germans were strongly engaged against Russia, and Austria-Hungary felt that it was time to make an effort against Serbia in keeping with her strength. She thus made plans for the winter campaign which led to her disastrous defeat in the Battle of the Ridges. Her decision pleased Germany, since Turkey was just coming into the war, and that accomplished it was only necessary to crush Serbia and use a little more judicious diplomacy with Bulgaria in order to open the railroad from Berlin to Constantinople.

For delivering this blow Austria organized an army of seven corps, nearly 300,000 men. It is not thought that the Serbs were more than 200,000, and they had a slender supply of ammunition, their only means of getting it from the outside world being through Antivari, in Montenegro, by pack mules over the mountain trails. Greek neutrality did not permit the open importation of munitions through Salonica.

Early in November the Austrian advance began on a large scale. A strong column crossed the Danube at Semendria and advanced southward along the railroad that parallels the Great Morava River. If not opposed it would reach Nisch 110 miles southward. But the greater part of the invading force crossed the Drina in two columns, one near the Jadar and another opposite the head waters of the Western Morava, 70 miles to the south. Against this triple force the Serbian crown prince stood with his chief army in the hills overlooking the Jadar. But he did not dare remain here for battle, lest the first and third Austrian columns should turn his flanks and cut off his communications with Nisch. Drawing back into the hills, he took a strong position on two elevations, the Maljen and the Rudnik or Suvobor ridges, which run across central Serbia 50 miles south of Belgrade. In front of him was the central Austrian column, flushed with

the confidence its unopposed advance for 40 miles into Serbian territory gave it. To the southwest the third column stood before Ushitza, faced by a determined Serbian force well placed in the hills.

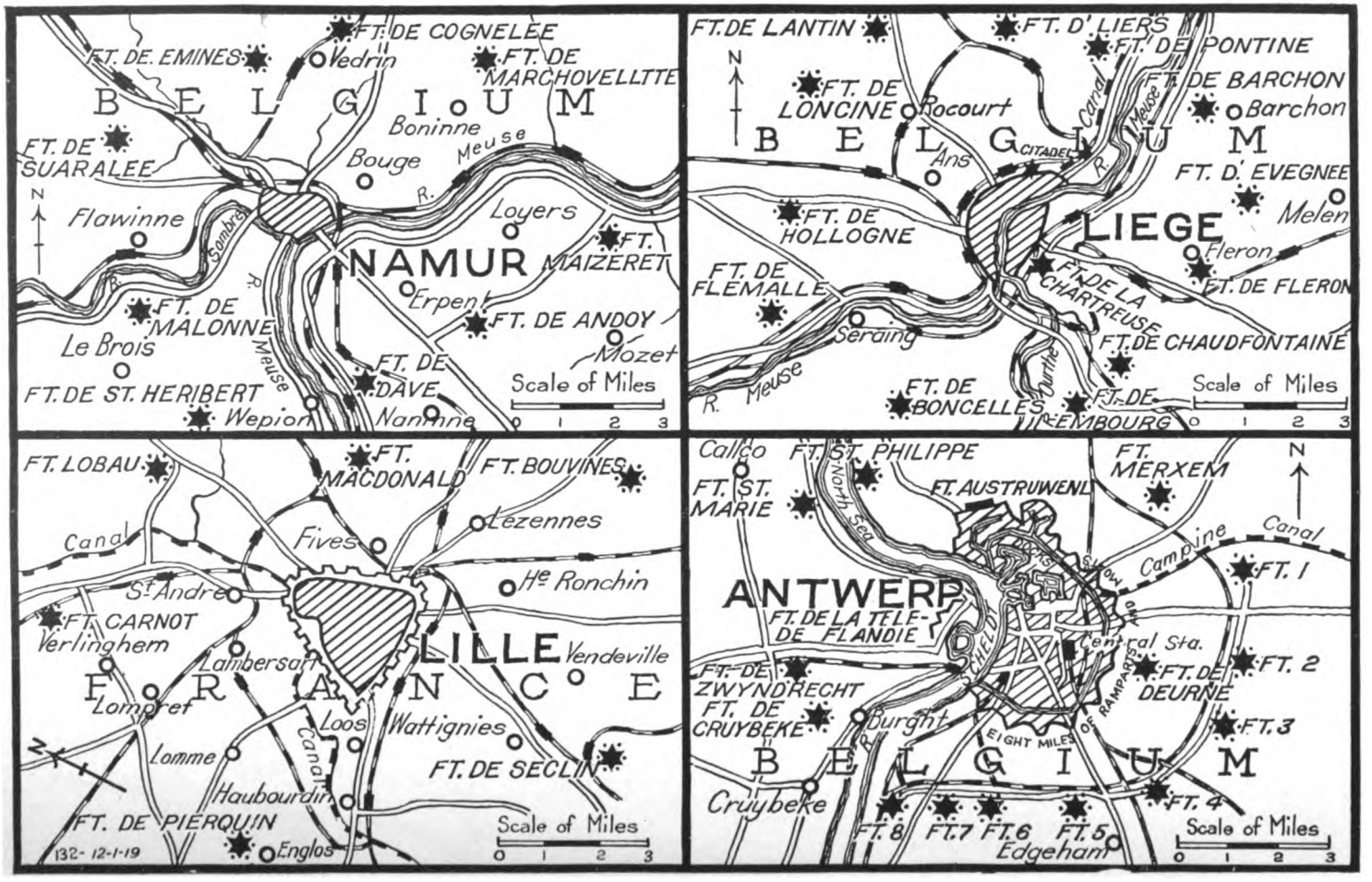
If the Austrians had attacked promptly they might have won a victory, but they waited two weeks. They were so sure of their position that they sent away two corps to help in the defense of Cracow, threatened by the Russians. In this interval the Serbs received a much needed supply of ammunition from the Entente Allies through Greece, by what means we have not yet been told. It gave new courage to the Serbians, who now prepared to force the battle. Their artillery was admirably placed on the hills and commanded the Austrian lines. On 3 December they delivered their attack. King Peter, old and ill, came out to the battlefield and sent his soldiers forward with a ringing proclamation. Any man who desired might go home, he said, and no punishment would be inflicted; "but I and my sons," he added, "stay here." Not a man left the lines. During the afternoon of the 3d and throughout the 4th and part of the 5th the battle raged furiously, Serbian infantry and artillery inflicting great damage on the foe. On this third day, however, the Austrians could stand no more. They broke their lines and the Serbs rushed through, dividing them into two masses who sought to escape through the narrow passes among the hills. From the 6th to the 15th the pursuit was maintained until the invaders were driven out of Serbia at all points. Belgrade, which had been occupied, was recovered, and the victors had 40,000 prisoners and many guns as the reward of their bravery. It was reported that the killed and wounded among the Austrians numbered 40,000. In this heroic way did the Serbs justify the confidence of their king and again proved themselves equal to any warriors in the world.

3. The Campaign in Belgium.— Germany ordered mobilization on 1 August. It was completed on 12 August, three days before the process was achieved in France. But the Germans did not wait for complete mobilization before they moved on Belgium. On 2 August they informed the Belgian government of their intention to attack France through Belgium. A similar notice was given to Luxemburg on the same day. Both were accompanied with the assurance that the rights of person and property would be respected if no opposition was offered to the German forces. Luxemburg was too small to raise objection and the Germans promptly occupied the duchy, filling it with troops destined to march on Longwy. In Brussels, on 3 August, King Albert laid the communication before the Belgian Chambers, who refused the demand and resolved to defend their country to the utmost.

On 4 August 12 regiments of German cavalry crossed into Belgium and followed the road south of the Dutch border to the Meuse, occupied the town of Visé, and seized the west bank of the river, driving back a weak Belgian force that retreated to Liége. On the same day General von Emmich commanding the 10th corps crossed into Belgium and approached Liége directly. It was that day also, that the German Chancellor, announcing to the Reichstag the presence of German troops in neutral Belgium, said: "We are now in a state of necessity, and necessity knows no law. We were compelled to override the just protest of the Luxemburg and Belgian governments. The wrong — I speak openly — that we are committing we will endeavor to make good as soon as our military goal is reached."

On 5 August von Emmich appeared before Liége and demanded permission to pass through the town. Receiving a refusal he formed his forces in line of battle and undertook to pass through the spaces between the eastern forts. The Belgians had about 20,000 men in Liége and received the Germans so steadily that the assault was beaten off with heavy losses. Von Emmich then used his artillery, which outranged the artillery of the Belgians. Placing it at a safe distance he poured a heavy fire of high explosive shells on the easternmost of the 12 forts defending the town. These works were supposed to be the highest achievements of the art of military defense. They were constructed of heavy concrete turrets, the walls sometimes 12 feet thick. They were conical turrets flush with the surface of the ground, with disappearing guns operated by men who lived well protected beneath the surface. At first the Germans used their ordinary heavy artillery. With their high explosives they were able to destroy the mechanism of the disappearing gun in one of the forts. This made an opening through the line of ring-forts through which attackers began to work their way, despite the spirited opposition of the infantry. Next day, the 6th, another fort was silenced, opening a still wider gap and giving the Germans an approach to the town from the southeast. A venturesome party of hussars saw the opportunity and galloped into Liége. They hoped to seize General Leman, the Belgian commander, but he escaped them. Two more forts were destroyed this day, and thus the whole eastern side of the town was uncovered. The Belgian infantry remained in their positions and held back the men of von Emmich's command, but they were not numerous enough to hold the lines south of the place also. By this time the attacking troops were being heavily reinforced, and General Leman withdrew from the town, lest he be surrounded and captured, drawing off in the direction of Namur, where the main Belgian army had taken position. The forts on the west and north of Liége held out several days longer. The last fell on the 15th, by the Belgian account, although the Germans claimed that it fell earlier. In this fort, Loncin, was General Leman, when a shell penetrated and exploded the magazine. He was found in the ruins, unconscious and near death from the fumes of the explosives and taken prisoner by the victors.

Thus the invaders were delayed at Liége until the middle of August. Through the place ran the four-track railroad from Aix-la-Chapelle into France, a main dependence of the Germans for the transportation of heavy stores. As long as the forts held out this line could not be used by the Germans for concentration to the westward. During the interval, however, they were crossing the Meuse in large numbers, deploying into the plain north of Liége and working along the south bank of the Meuse west of the town until on the 12th they seized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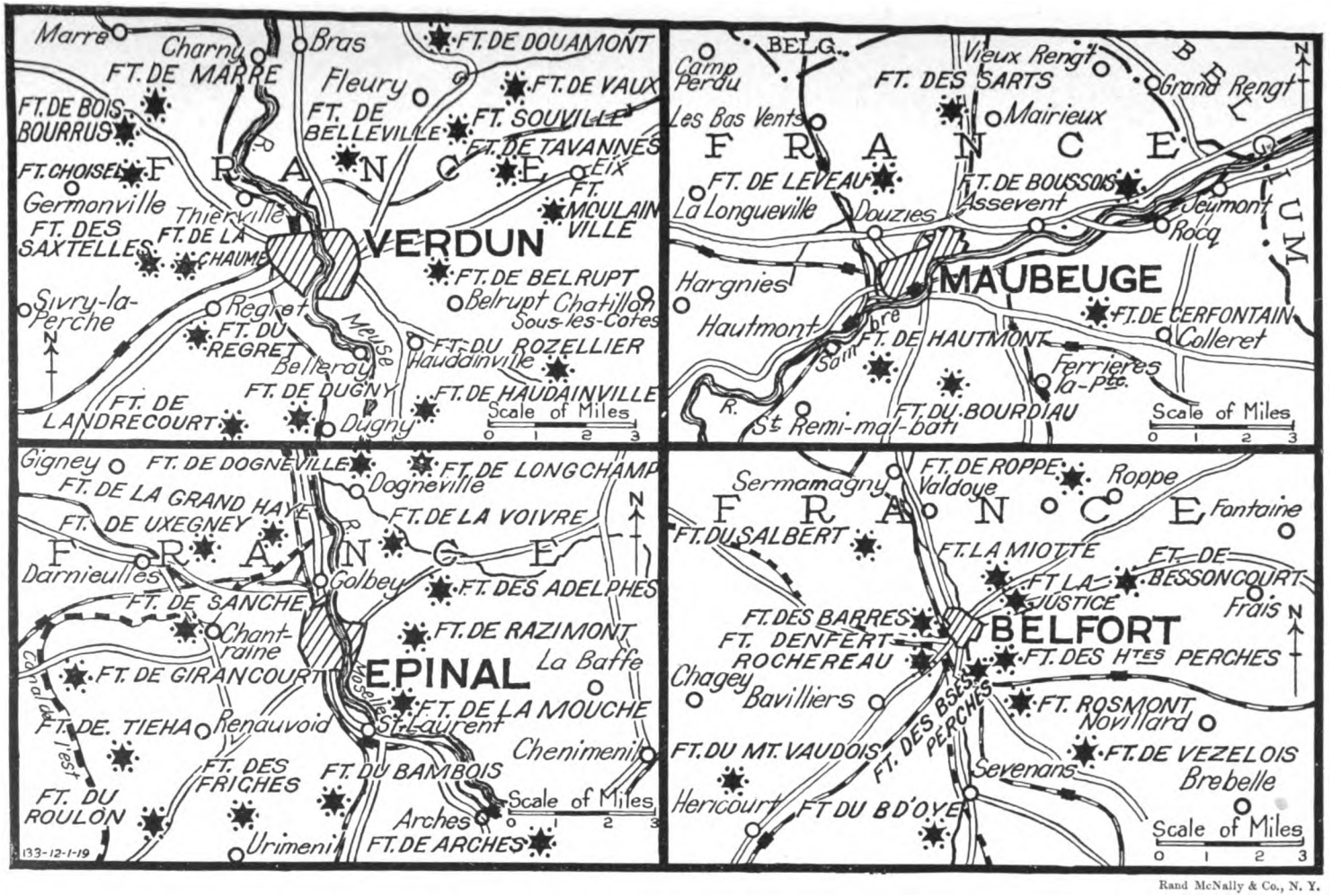

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MAIN FORTRESSES OF THE WESTERN FRONT

Railroads Railroad Stations Roads Canals Forts

Huy, midway between Liége and Namur. About the 15th, having completed their mobilization, they began to pour into Belgium in great waves, filling every road with men, artillery and supplies.

The defense of Liége was pronounced a great achievement by the Entente. Considering the weakness of the defenders and their lack of training, it was a good piece of soldiery work; but it was not as successful as the newspapers reported. The Germans suffered moderate losses but accomplished all they attempted. However, they did not take Liége with a *coup de main,* as they had expected. The resistance of General Leman was spirited. To see this small nation which might have found refuge in timid counsels, stand to arms and oppose resolutely the overwhelming force of those who violated her sovereignty, aroused the admiration of every country that was not obsessed with the German view that might gives right. In the United States, in particular, it was received with enthusiastic sympathy, and found immediate expression in large contribution for the relief of the suffering Belgians.

In the general plan of Belgian defense Liége was only an advanced post. Mobilization had been completed on the 6th, and the main Belgian army under the king had taken position along the small river Geete on a line that had Namur on the right and Diest on the left. It thus covered Brussels and Antwerp, and the king hoped to hold it until help came from Great Britain or France. If enough troops could be assembled here to hold back the invaders for a time, not only would Belgium be protected in its richest parts but northeastern France would be saved. The French, however, refused to move a corps until mobilization was complete, that is until the 15th of the month; and the British did not arrive in sufficient numbers to save their gallant allies. Looking backward, we have to admit that no allied forces could have been thrown into Belgium in time to repel the vast numbers that were thrown against it.

While King Albert stood before his two chief cities the advance guard of German troops continued to enter his country. They threw out before them a screen of cavalry that ran up to the front of the Geete line and concealed the arrival of troops in eastern Belgium. This situation lasted until the middle of the month, and the Belgians began to fancy that they could retain their position until the French and British arrived. During this period the French were establishing a line along the border, the scene of their mobilization. It ran northward and reached the Belgian boundary south of Namur. Connected with the Belgian line at that place, would it be carried on in increased strength to Antwerp? That was a question that dominated the situation in the north until the middle of October. If this line as first established could have been held the richest part of Belgium would have been saved from German fury. But to hold it the French and British must come in strength and come quickly. The thin Belgian line could not withstand the forces the Germans were assembling near Liége and along the Meuse.

On 18 August King Albert saw signs of a strong attack on him and decided to wait no longer for the sorely needed help. He abandoned his Geete line and drew off to the northward, where he tried to make a stand before Brussels. It was high time that he looked to his safety; for the armies of Generals von Kluck and von Bülow, about 500,000 men in all, were moving against his force of 100,000. As he fell back he broke his line near the southern end, leaving Namur to its fate. The Germans poured through the breach and von Bülow quickly invested the fortress, bringing up the fatal great guns which had eaten away the defenses of Liége. Von Kluck, who marched north of von Bülow, drove the Belgians out of Louvain and pressing on entered Brussels, King Albert withdrawing to the defenses of Antwerp. The king may have expected his opponent to follow him and besiege the place or occupy the coast towns; but von Kluck was after other game. Leaving other troops to hold back the Belgians in front of Antwerp, he swung through the central part of the Belgian plain to the Sambre River and took his place on the right of von Bülow, who was already making sad havoc with the outlying forts at Namur. The remainder of his story belongs to the history of the campaign in France.

It only remains to tell the fate of Namur. Von Bülow brought up his great howitzers with tractors and great teams of horses and opened fire. One after another the forts fell in a bombardment that lasted little more than 24 hours. The garrison, consisting of 12,000 Belgian infantrymen and two French battalions who arrived at the last moment, held out until the 23d and barely escaped as the Germans moved into the city. They fell back to the protection of the French lines and later took their places by the side of the king when he had moved his Antwerp army to the line of the Yser in the vicinity of Nieuport. Thus ended the attempt to block the German advance through Belgium. The fall of Antwerp was delayed for nearly two months, because the Germans preferred to give their efforts to their futile march into France.

It was during this early period that most of the heartless incidents occurred which shocked the world under the general description of "Belgian Outrages." In the story there was, probably, a certain amount of exaggeration, but at bottom there was undoubtedly a great deal of truth. The German is a hard master. His phrase, "This is war," sums up much relentless cruelty. He arrived in Belgium with the conviction that the population was truculent and ready to wage guerrilla warfare, when opportunity offered. He decided to employ such a course of repression as would strike terror to the people. It is also true that the Belgians were bitterly incensed at their wrongs and hated their conquerors fervently. There seems to have been enough sniping by the inhabitants to demand some kind of notice by the military authorities; but good administrators would have found a more humane way of dealing with it than to seize hostages and shoot innocent men as warnings. When the Belgians found that their labor went to the support of their oppressors they ceased to work. This led to attempts to make them work and finally to forced drafts of laborers, men and women, to be sent

away to German towns. Worse things than these occurred in a country where the native women were frequently left to the mercy of unrestrained soldiers.

Two incidents in this series of black horrors stood out then and shocked the world. One happened at Aerschot. The story that is oftenest told has it that the German officer commanding in the town was being entertained by the burgomaster. As the evening advanced the guests were excited and called for more wine. The daughter of the host brought it into the room, and one of the officers offered her the kind of insult that drunken soldiers too frequently offer to woman. The young brother of the girl resented this action, words followed, and the officer was killed. This was construed as an attack on the Germans by the inhabitants, and next morning the burgomaster and other prominent citizens were shot by the Germans. Then the town was delivered to the torch. Two-thirds of the houses were destroyed after they had been looted. Visitors to the place found the streets deserted, and the ruined houses littered with furniture and clothing that had been broken or scattered about in sheer wantonness. The sidewalks were slippery with spilled wine and bristled with broken bottles. Ruin and blood bathed the town testifying to the energy of the German fury.

The incident at best was a ghastly display of lawlessness. The destruction of Louvain was accompanied by every token of barbarism. The city contained many buildings of the Gothic style, survivals of the Middle Ages. It had, also, a university whose library was rich in ancient manuscripts. Its church of Saint Peter was a notable edifice and contained some famous paintings beside rare carvings. In this town on 26 August was a body of German troops commanded by Major von Manteuffel, when firing occurred during the evening and several Germans were injured. The inhabitants explained it by saying that a body of Germans that had marched against Malines, then occupied by Belgian troops, had been repulsed and thrown back on Louvain. Coming into the town in the darkness they were mistaken for Belgians and fired on by the Germans in the town, many of whom were drunk. They returned the fire and soldiers were wounded in each party. This story of the origin of the trouble was confirmed by the inhabitants and published by the Belgian officials. The Germans alleged that there was a conspiracy by the inhabitants, who fired on the soldiers. There is little question that most of the German soldiers, seeing their fellows wounded, believed this to be the origin of their wounds. Major von Manteuffel made no careful investigation, took the readiest explanation that suggested itself, and ordered the town destroyed. The work was carried out systematically. Houses were looted and fired by bands of soldiers who passed from block to block. The university with its library and Saint Peter's Church, with a large number of the handsomest old residences, were reduced to ruins. Only the city hall was left standing of all the early architectural monuments. An American newspaper correspondent, Mr. Arno Dosch-Fleurot, who passed through Louvain, where his train remained two hours, saw the effects of the fire from the railroad station 24 hours after the disturbances began. He writes as follows:

"It was not until we came in sight of Louvain that we realized the extent of the destruction. Some of us had not been able to credit it until we saw it with our own eyes. I was prepared to find one or two of the more troublesome quarters destroyed, but the first thing that caught my eye was the roofless church of St. Pierre. Across the Grand Place the Hotel de Ville still stood, but everything in between, a distance of half a mile, and everything for a mile beyond, to the farthest rampart, was burnt. All the handsomest houses in the northern end of the city were bare brick and stone walls. There were a few buildings along the ramparts to the east still standing, but these, too, were burning when our train went on two hours later. My first inclination, as the train pulled in, was to go through the ruined town, but the train had hardly come to a stop before a soldier, drunk both from excitement and drink, shoved his head into the window and cried with an expressive gesture, 'Three cities razed! Three! There will be more!'"

Another soldier appeared and threatened to kill the reporter, mistaking him for an Englishman, but a third soldier pushed him aside with the remark: "He's drunk." Of the final act in the tragedy the observer reports as follows:

"About a hundred English prisoners were led across the Place de la Station and, after they had been placed in cars, a long line of citizens of Louvain were brought around in a circle under guard. I could not make out at first what the purpose of this was as my view was temporarily cut off by a cow that was led to the main entrance of the station. But presently a bayonet was run into the neck of the cow, and, as it fell, I could see a group of about 15 men, in civilian clothes, closely guarded. The long line of Louvain citizens was being led around them. It was difficult to make out what was going on. I asked the soldier at our window and he said carelessly, 'Oh, those are the civilians who returned today to shoot us after we had burned half the town. We are going to shoot some of them.'

"The outer line of civilians kept marching in a circle until they had all passed close to the men in the center. Then the line opened and the inner group passed out to the right. A group of soldiers followed. After an interval of only a minute or two, hardly time for absolution, we could hear the rifles of the firing squad. Evidently the careless soldier knew what he was talking about. 'Hear that,' he said, as the rifles cracked. 'What did I tell you?'

"Immediately some one climbed on a gun carriage among the group of citizens standing motionless before the station entrance. I could not hear a word he said, but his expressive gestures showed he was exhorting his fellow townsmen to accept their fate and yield to the conquerors. While he talked, the butcher in the foreground skinned the cow with professional coolness, and began carving the carcass."

Many a Belgian village and small town paid as dearly as the city of Louvain for the unsubmissive spirit with which it took up the yoke of the conquerors. It would seem that the German High Command at the time was so sure of winning pre-eminence in world affairs that they thought they could afford to ignore the judgment of public opinion in the world.

4. The French Border Offensive.— It has been said that the French High Command had made plans for an early quick offensive against the German frontier south of Belgium. They lost no time in putting it into effect. On 7 August, eight days before their mobilization was complete, they pushed troops into Alsace, occupied Altkirk on the 8th, and took Mühlhausen on the 9th. France burst forth into peals of rejoicing when it was announced that the "lost provinces" were being recovered. The Germans, however, rallied on the night of the 9th and recovered Mühlhausen. Then another French army, commanded by General Pau, was sent into the province, which retook Mühlhausen and occupied a considerable portion of the slopes of the Vosges Mountains. Feeling that all was going well here the High Command then undertook a similar movement in Lorraine. Here a French force crossed the border on the 12th, moving steadily forward. In a week they had

penetrated the province from 15 to 20 miles and had crossed the railroad connecting Metz and Strassburg. The Germans had expected the attack and were ready to fight a defensive warfare, while the main strength of their armies for the time was thrown against Belgium. The French found them strongly placed at Morhange and charged impetuously. Then became apparent the new type of warfare, for which the French were not prepared. Rushing forward the lines came under the fire of the heavier type of German field gun. These pieces outranged the French 75's, which were useless against the enemy and not close enough to support their infantry. When the Frenchmen charged forward they suddenly came to strong wire entanglements. Here they were exposed to heavy fire and lost many men. Under the circumstances the 15th corps, from Marseilles, broke confusedly and carried other troops with it in disorder to the rear. The Germans delivered a counter-attack, pressed back the French, and it was not until General Foch, commanding the 20th corps, had used his greatest efforts that the retirement was checked and imminent disaster averted. To save the day, the army which had won successes in Alsace was shifted to Lorraine, thus relinquishing most of the ground won there. When these two movements ended the French stood in general along the line which for 40 years had separated France from her "lost provinces."

The German army in this section, commanded by the crown prince of Bavaria, now pressed forward, hoping to seize Nancy. It was met with great steadiness by the French under General Castelnau and failed in its effort. Three weeks later, while the battle of the Marne was being fought, it renewed the attack and was again defeated in a great battle. Thenceforth to the end of the war there was no more serious fighting on the battle-line from the Moselle to Switzerland.

A third French offensive was undertaken along the line east of the Meuse Valley and north of Verdun. Here two French armies commanded by Generals Ruffey and De Langle de Cary took the offensive, the first attacking the German crown prince in front of Longwy, and the second attacking the Duke of Württemberg, near Neufchâteau. Each met the same disadvantage that their fellows encountered at Morhange. Their guns outranged, the men lost heavily before the German barbed wire and fell back from the encounter. Here again the Germans took the offensive at once, and the French retired behind the Meuse. But they fought bravely as they went and did much damage to their foes.

The combined French offensives were thus brought to disastrous ends by the German superiority of equipment. Herein was a most significant fact in the war. Improved machines of destruction were to be the order of the day. In no other war in history did the contest open with such decided advances in the weapons of war since the last previous struggle; and in no other war were such improvements made in the weapons actually in use while the conflict lasted. One of the consequences was that in no other war have men been killed so freely. Never before did the actual combatant have so little chance for his life in the presence of the enemy.

5. **From the Sambre to the Marne.**— We come now to the main German offensive in France, a campaign of three weeks, extending from the time Germany completed her mobilization and threw her massed troops on the defensive line of the Sambre to the time she encountered the smashing counterstroke of the French and British south of the Marne, that is from 20 August to 5 September. First as to commanders: At the head of the Germans was General von Moltke, nephew of the great general of the Franco-Prussian War and chief of staff when the war began. He was esteemed a master of war according to German methods, and his name aroused confidence and enthusiasm in his army. Experience, however, was to show that he relied too much on prepared formulas, that he was not keenly alive to the opportunities that presented themselves and that his influence was broken by his failure to carry out the long cherished plan successfully. His failure to defeat the French at the Marne and his neglect of the opportunity to seize the Channel ports in the first weeks of the war led to his resignation on 22 Oct. 1914.

The chief of the general staff in France was General Joffre, then little known outside of army circles. To the soldiers, however, he was known for a level-headed and straightforward man, a faithful engineer officer who had done well in constructing colonial fortifications. No one who knew him disliked or distrusted him. To the soldiers he was endeared by his simple manners and his readiness to respond to every demand that the service made upon him. The first weeks of the war, when the fortunes of France seemed dark, found him cheerful and always master of himself. He had able assistants who trusted him as much as he trusted them.

The two great bodies of troops that faced each other in France were organized in field armies of about 200,000 men each. As they stood in the last days of mobilization the German armies were as follows: 1. The 1st Army, under General von Kluck, made up of four army corps and a body of cavalry, about 200,000 men and stationed near Cologne. 2. The 2d Army, under General von Bülow, consisting of three corps and a large body of cavalry, stationed on the Rhine just south of Cologne, about 200,000 men. 3. The 3d Army, under the Duke of Württemberg consisting of four corps and a body of cavalry, stationed in the Moselle Valley in front of the Belgian Ardennes, containing more than 200,000 men. 4. The 4th Army, under the German crown prince, consisting of three corps, stationed near Treves to the east of Luxemburg, and containing nearly 150,000 men. 5. The 5th Army, under the crown prince of Bavaria, consisting of four corps, stationed just south of Metz, about 200,000 men. 6. The 6th Army, under General von Heeringen, consisting of two corps, stationed at Strassburg, about 100,000 men. Just as the operations began still another army was organized under General von Hausen, partly by drawing two corps from the 3d Army, and it was assigned position just south of the 2d Army. As the march was taken up most of

these armies were strengthened by the addition of troops just arrived from Germany. The whole assemblage of troops numbered more than 1,000,000 at first. The armies stood in a line 190 miles long, although it was not continuous. It faced toward France, and the plan, as soon revealed, was for the lower part to move forward slowly toward the west, while the upper part swept into Belgium and bent around to the southwest and then moved on toward Paris. As this part had further to go its movements were as rapid as possible, and to that end a large number of motor trucks were used. To the 3d Army was assigned a direction due west, through the Belgian Ardennes, in order that it might come into close support of the 1st and 2d armies and the new army of General von Hausen. It struck the French defenses at Dinant and south of it. These several armies were ordered to move into position in such a way that they would come into a continuous line north and west of Verdun, and swing round to the south with that place for a pivot.

Opposite to them General Joffre assembled six French armies. In the angle between the Sambre and the Meuse, south of Namur, was one under General Lanzerac; northeast of Sedan stood another under General De Langle de Cary; in front of Longwy stood a third under General Ruffey; in front of Nancy was a fourth, under General Castelnau; a fifth, under General Dubail, stood on the border of upper Alsace; while the sixth, under General Pau, was to the east of Belfort facing lower Alsace. From the time the French offensive on the border was checked these armies were on the defensive. Conscious of the superior strength of the Germans, General Joffre ordered his commanders to feel the enemy and wait for a favorable time to deliver battle. He had a seventh army, but generally known as the sixth, under General Maunoury, but more of it later.

Another army opposed to the Germans was the relatively small British force commanded by General French. The British mobilized on 3 August and on the night of the 7th an expeditionary force began to embark for France. Ten days later 150,000 men had landed. It was considered a great 10-day achievement to assemble and equip this force and gather the ships to transport it to France with the necessary artillery, horses and supplies. The point of concentration in France was Amiens. General French had an early conference with General Joffre and it was agreed that he should move northward as soon as his force was ready and take position by the side of the Belgians who were then holding the Geete line across Belgium. At this time the French lines were being extended as rapidly as possible to the region south of the Sambre, and it was thus expected that the allied line would be made safe from Antwerp to the Swiss border. The British expedition contained two army corps; the first under General Haig, and the second under General Smith-Dorrien, aggregating about 80,000 men, and a cavalry division under General Allenby. General French had objected to the appointment of Smith-Dorrien, wishing General Plumer instead. In Haig and Allenby he had great confidence. He had a third corps in France, but as it was not completely organized he moved forward with his first and second corps and Allenby's cavalry. By this time the Belgians had opened the gap in central Belgium and General French found himself obliged to take position west of the French army under Lanzerac in a line running from Binche through Mons to Condé, with his cavalry a little farther west. He thus held the extreme allied left, his left flank in the air.

Neither Joffre nor French realized how many Germans were in Belgium, and they both thought Namur could hold out a month, checking the invaders. It was their plan, therefore, to drive back their opponents in this section, swing the British and Lanzerac round to the north and re-establish the line the Belgians had been forced to relinquish. They soon learned their error. In fact, they were so badly outnumbered that von Kluck, on the German right, was ever extending his line westward, trying to get around the British position. In order to avoid being surrounded here, as Napoleon III had been surrounded at Sedan, it became necessary for the Allies to fall back continually.

The Germans got their heavy guns before Namur on the 20th, the day von Kluck entered Brussels, and the place was occupied on the 23d, the last fort being silenced two days later. The air service of the British and French was as good as that of the Germans, but it was relatively undeveloped. It did not reveal to the commanders the vast concentration of the enemy in Belgium. They did not know that in these critical days three great armies, more than 600,000 men, were moving on Lanzerac and French. Von Hausen was coming up just to the south of Namur, von Bülow had enveloped it and was marching southward, and von Kluck was moving with great rapidity on Mons and the region to the west.

Lanzerac was at Charleroi, which von Bülow's forces reached on the 22d. Furious attacks occurred at once and the place changed hands several times on this day, the French at last standing their ground. But at this moment the news came that a part of von Hausen's army had forced its way across the Meuse south of Namur and was threatening Lanzerac's communications. He decided that a withdrawal was necessary and made the move in good order. Next day, the 23d, the remainder of von Hausen's army in a hard battle forced the crossing of the same river at Dinant, eight miles south of his position in front of Charleroi, and he continued his retreat until his line rested on the forts at Maubeuge and Givet.

Meanwhile the British at Mons were preparing to receive the attack of von Kluck, which they expected hourly. All through the day on the 22d they heard firing in the distance and thought it the guns before Namur, 30 miles away. By some strange chance Lanzerac failed to inform them of his withdrawal and they worked hard on entrenchments, thinking it was for them to protect the western part of the Allied line. Late in the afternoon some of von Bülow's men appeared on their right and tried to turn it. General French's two corps were holding a line 25 miles long, about 3,000 men to a mile. General French thought that only

two German corps were in front of him and felt that his own two corps were sufficient to deal with them. In the afternoon of the 23d his line was strongly attacked throughout most of its length, but with especial severity at Mons and eastward. In this battle the British soldier showed great courage and inflicted heavy losses on the enemy. Although pushed back by a portion of von Kluck's army on his extreme right, General French still held his position at nightfall with great pressure on his entire front. About 5 o'clock in the afternoon he learned from Joffre that Lanzerac was in full retreat, that von Kluck had, not two, but three corps on the British front and another thrown out to the westward, trying to turn the British left. It the left flank to drive the British into the defenses of the town, while Lanzerac had continued to retreat on the east. General French decided that the only course left was to continue the retreat during the night, allowing only a few hours for rest. Next day the German pressure was a little less and the army reached Le Cateau, a march of 15 miles, the British line extending along a front of 25 miles. Here General French was joined by 11,000 fresh troops of the fourth division, drawn northward from the still unorganized third corps.

Le Cateau had been selected as a place for recuperation: it proved to be the scene of a fierce battle. As the first corps, under General Haig, was settling down to sleep behind its out-

was at once evident that the British position was perilous. The commander decided to fall back and ordered his heavy transport trains to move southward at once. He directed his army to hold their position until nightfall, then get what rest they could and begin to retreat at dawn the next day, the 24th. Thus began the celebrated retreat of the British army through northern France.

The 24th was a hard day, the Germans pressing strongly on the retreating columns; but Allenby's cavalry, riding from one point to another, where danger was greatest, gave much relief, and the infantry turned now and again to fight off the enemy when he came too close for comfort. At nightfall the army had gone back 10 miles and stood at Maubeuge. Its position was critical; for von Kluck was pressing posts near the village of Landrecies, a fresh German corps attacked suddenly in the darkness, thinking to make short work of the exhausted British soldiers. But the men stood to their arms and during three hours beat off a strong assault along their whole line. They were materially helped by the arrival of two French divisions, who came up on their right flank, and at midnight the Germans gave up their battle.

At dawn on the 26th the retreat was resumed. Haig's corps, stiff and sore from the previous marching and the night battle of the 25th, could only hobble along. Smith-Dorrien's and the fourth division were in better condition, but in the early dawn they were so fiercely attacked by the Germans at Le Cateau that they could not hope to move off safely. Hastily entrenching

they prepared to resist to the end. Charge after charge was repulsed. At 3 P.M. their position was critical, when General French ordered them to break off the battle and withdraw as safely as possible. Fortunately, the Germans had also suffered too much to continue the fight and did not pursue as vigorously as was expected. Falling on some of the last units that withdrew they inflicted great losses, but the corps got away, tired, thirsty and completely shaken. It marched through the night in front of the pursuing foe until in the early morning of the 27th it halted at Saint Quentin. That day help came from the French and the pursuit slackened, so that the British arrived at the Oise River on the 28th, where they were in comparative safety.

The five days retreat from Mons was a bitter experience for the British Expeditionary Force. They only barely escaped complete disaster and lost heavily, but they fought with signal courage. General French was chagrined at his treatment by Lanzerac, who certainly should have communicated with him as soon as he fell back. He was also aggrieved by the failure of the French to send him support in the five bitter days of retreat. On the other hand, it is claimed that General French himself was nearest to von Kluck and should have known first of the superior concentration on his own front, that he did not begin the retreat as promptly as he should have begun it, and that he did not recognize that the French were also hard pressed by the armies opposed to them. Lanzerac, it must be remembered, did not make a general retreat on the 22d, but only swung back his right to adjust it to the thrust of von Hausen, south of Namur. It was not until the 23d that von Hausen seized Dinant and forced the French army to fall back along the whole line. A few hours later Joffre gave his warning to the British commander. Of course, Lanzerac should have communicated both pieces of information to General French, whose safety was closely related to any changes on the French front; but it was only the second move that put the British force in dire peril, and in regard to that movement the delay in communicating with General French was not great. The traditional distrust of the British soldier of the military efficiency of the French was not dispelled until after the battle of the Marne, and General French, who had both the faults and virtues of his countrymen, felt that he was the victim of Gallic instability. However, he did not lose confidence in Joffre and his book, '1914' bears abundant evidence of his friendly appreciation of the generous and tactful attitude of the French generalissimo. Lanzerac was removed at the end of the retreat, although he had fought magnificently on the retreat and inflicted on the Germans at Guise the heaviest defeat they experienced before the battle of the Marne.

The withdrawal of the British from Mons to the Oise was the most spectacular feature of the general retreat; but we must not forget that it was only a part of the general movement. Von Kluck made the most powerful demonstration of all the German generals, but east of him came in turn von Bülow, von Hausen, the Duke of Württemberg, the crown prince of Germany and the crown prince of Bavaria, all of whom were in motion as far as Verdun in unison with the general German sweeping movement. Facing them were the Allied armies in the following order: the British, Lanzerac, Langle de Cary, Ruffey and Castelnau. The French thrust across the border started a few days before the Germans began to swing their line forward. The counterthrusts following that movement were really synchronized with von Kluck's, von Bülow's and von Hausen's movements. As von Kluck advanced and threatened to turn the left of the great line, it became necessary for the interior part of the French line to fall back. The Germans in front of it followed and fought when they could. It was thus that they crowded Lanzerac at Guise, whose retreat from Charleroi gave them the idea that he was shaken. His splendid reply, a bad defeat for his opponents, showed that his army was intact and left him opportunity to continue his retrograde movement unhampered. The world was surprised to see what a small check the French fortresses gave to this advance. Between the 23d, when Namur fell, and the 28th, when the line reached the Oise, Longwy, Montmédy, Hirson, Mezières and Lille, all the northern fortresses but Maubeuge, fell to the enemy. Maubeuge, with a garrison of 30,000 did not succumb to the 11-inch howitzers until 7 September.

A story was told in connection with the siege of this place that should be remembered as an illustration of the bad effects of illy-considered assertions. It was said that before the war a Belgian had built an engine factory at Lanieres, near Maubeuge, the real owners of which were the Krupps, of Essen, and that when the Germans arrived they uncovered concrete foundations at the factory on which they placed 16½-inch howitzers for use against the forts of Maubeuge. Investigation showed that they did not use guns of that calibre in this action but 11-inch howitzers, fired on their own wheels. It was also recalled that Lanieres is southwest of Maubeuge, while the German guns attacked it from inside the Belgian frontier and to the northeast. The story seems to have originated with a Paris newspaper. It was widely repeated and went far to give the Germans their reputation for unusual ability in espionage. It was responsible for a wave of hysterical searching for pre-arranged gun positions in London, which, in the end, proved to be mostly fancy.

6. The Battle of the Marne.—At the Oise the British obtained a day's rest. The Germans were nearly as tired as their opponents and needed respite from their heavy marching. The line then ran from Verdun almost straight to Guise, where Lanzerac's victorious army stood, and then curved through Saint Quentin until it came to Noyon. Behind it about 12 miles was a position through La Fere, Laon and Rheims, at which the French High Command had been expecting to stand against the invaders. Joffre visited General French on the 29th and talked over the situation. His conclusion was that it would be unwise to offer battle until the British had recovered from their recent trying experiences. Accordingly, he ordered all the armies to retire south of the Marne. From 30 August to 3 September the retirement went on, the Germans following and striking wherever opportunity offered. The British proceeded to the Grand Morin, the French on the east

placing themselves in a line that ran through Provins, Sézanne, Maily and Bar le Duc. The Germans followed and were crossing the Marne at many places on 4 September. Their rapid march into the heart of northern France to a line east of Paris itself gave them the assurance of victory. Day after day strong cities fell into their hands; Lille, Péronne, La Fère, Saint Quentin, Noyon, Rheims, Soissons, Chateau-Thierry, Chalons and many others. "Victory after victory!" ran the news back to the Fatherland. The German High Command thought the British crushed and the French so weakened that only a smashing blow was needed to finish them. It was at this point that a movement was made to deliver the smashing blow.

On 1 September von Kluck, on the western end of the line, was at Senlis, north of Paris, and the German crown prince was west of Verdun, 115 miles due east. In between were the armies of von Bülow, von Hausen and the Duke of Württemberg, in all considerably more than 1,000,000 men. On that day orders were given to draw the lines in. As the crown prince moved southward he veered to the west, and as von Kluck moved southward he veered to the east. The result was that late on the 5th the line was only 90 miles long and proportionately denser and more powerful. This concentrated force was to be thrown on the French with the intention of breaking through at the centre and crushing the two wings in detail.

Two facts served to defeat this scheme: (1) At the French centre was an army under Foch, newly constituted and ready to die in its tracks. Foch had saved the day at Morhange, and he was to save it several other times during the course of the war. It was a bit of extremely good fortune that he was at the critical point in the battle of the Marne; (2) Joffre had assembled a strong army on von Kluck's right, unsuspected by the Germans, which was ready to play an important part when the proper moment arrived. It came into touch with the enemy on 28 August. All the way down from the Sambre von Kluck knew a body of French reserves were operating off his right flank, but his cavalry took care of them, pushing them southward and occupying Lille, La Bassée and Amiens. When he heard of troops on his left after the 28th he thought they were of the same character. His mistake was very costly. This 6th Army, as it was called, numbered 100,000 on 5 September, and was led by General Maunoury, one of the best French commanders.

It was 1 September that von Kluck veered eastward at Senlis. He crossed the Marne at Meaux and arrived at Coulommiers, 12 miles south of the river. The other German armies had kept touch on the east and stood, in general, from 12 to 15 miles to the south of the Marne. The order, west to east, was von Kluck, von Bülow, von Hausen, the Duke of Württemberg, whose lines ran across the river at Vitry-le François, and the crown prince, whose lines turned northward to the west of Verdun. South of them stood in order the British, Franchet d'Esperey who had superseded Lanzerac, Foch, with his new army, De Langle de Cary, and Sarrail who had superseded Ruffey and faced the crown prince, looking northwesterly. Maunoury was within the fortified area around Paris and faced eastward.

On 3 September Joffre learned that von Kluck was trending eastward. Divining the purpose, and also seeing the opportunity it gave him, he decided that he must strike before the German concentration became effective. A blow against the German flank at this moment would fall as a disconcerting surprise, and if the whole French force struck at the moment the German commander-in-chief would not have time to rearrange his line of battle.

The defenses of Paris itself were entrusted to General Gallieni, an old man, but one of the best men among the older officers of France. He it was who discovered von Kluck's eastward movement and told Joffre of it. Next day the two men had a conference in Paris and a plan of attack was prepared. Von Kluck had left one corps, about 40,000 men, north of the Marne to protect his communications. It was proposed that Maunoury should fall on this force, sweep it back beyond the Ourcq River, cut von Kluck's communications and attack him in the rear. To enable him to achieve success it was necessary for General French to deliver a simultaneous attack on von Kluck's advanced corps and thus hold them in their tracks south of the river, so they could not be sent to meet Maunoury. To carry out the plan it was arranged to reinforce Maunoury with troops from the city of Paris.

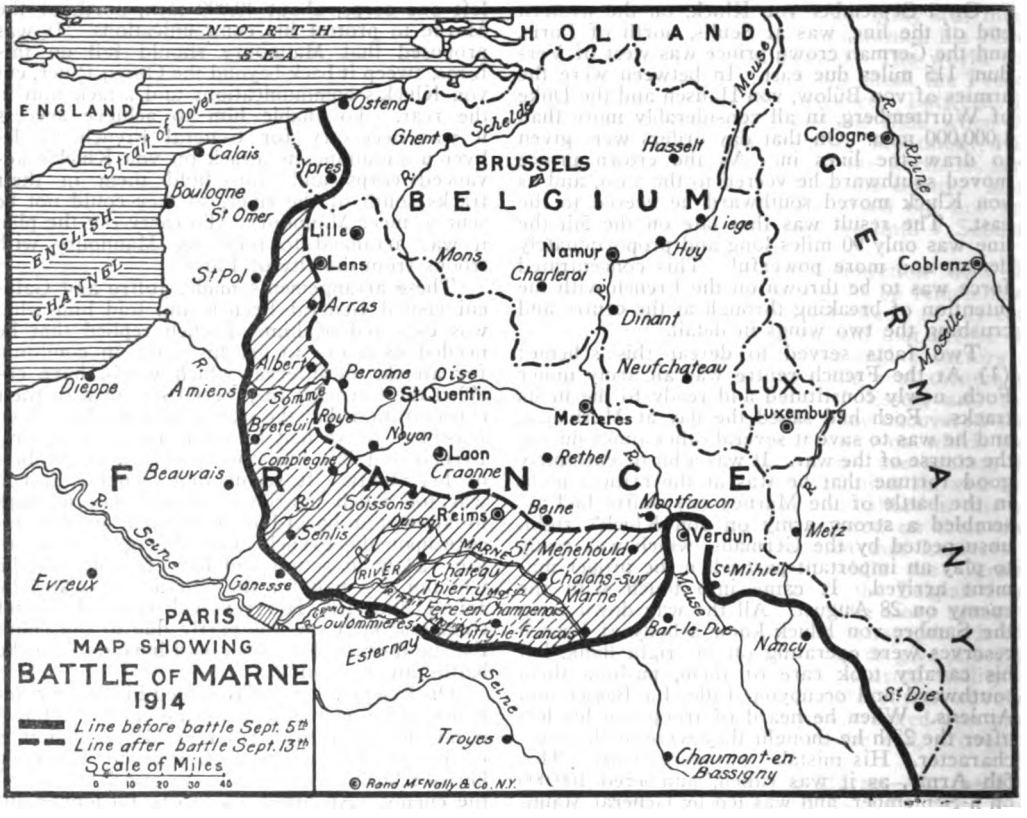
These arrangements made, Joffre and Gallieni visited General French and told him what was expected of him. French replied that he needed 48 hours to get his army in condition for attack, an interval which would have enabled the Germans to proceed so far with their concentration that the plan would not have been feasible. Joffre had no authority over General French and left him to co-operate to the best of his ability. It seems that General French was too much aggrieved over recent mishaps to attempt a hazardous movement in dependence upon the French in another great manœuvre. Slow in action and hard to convince, he was not the man for the situation in which he found himself. His removal from the chief command later on was partly due to the belief that he did not do all he could have done in the battle now beginning.

On 5 September Joffre issued his order commanding his men to engage the enemy. "I feel it my duty," he said, "to remind you that it is no longer the time to look behind. We have but one business on hand — to attack and repel the enemy. An army which can no longer advance will at all cost hold the ground it has won and allow itself to be slain where it stands rather than give way." All the commanders of armies were directed to assume the offensive.

Early on the 6th Maunoury struck von Kluck's exposed flank. One part of his army fell on the lone single corps on the Ourcq, and the other moved around to the north to cut the German's line of communication. Von Kluck, finding the British did not press his southern front, left his cavalry to hold them in check and with the remainder of his army hastened to the northern side of the Marne. Maunoury thus found himself facing a superior army and saved himself only by the most heroic fighting. He was not crushed, as he might have been, and he punished von Kluck severely, forcing him to draw back to the Aisne after four days of heavy losses. General French followed von

Kluck leisurely, pushing back the German cavalry, and crossing the Marne on the 9th, more than two days after von Kluck had crossed it. Had he fought as vigorously as Joffre expected, his 100,000 men would have made the battle of the Ourcq a German disaster.

It has since been disclosed that the German armies aimed primarily at cutting off the French armies and not at taking Paris. This plan, von Kluck himself asserts, failed for two reasons: First, the crown prince kept urging a general advance, insisting that there were no French troops in Paris, and, therefore, that von Kluck, who was on the German right flank, was free from all danger. Consequently when 160,000 men appeared on von Kluck's right the latter with great courage, but they could not hold their lines intact. On the right they were driven back three miles and a dangerous gap was made between them and the next army to the east. Their left had also suffered so much that it was merely able to hold its own. But the fighting had placed the Germans in a precarious position; for as their line stretched out to push back his two flanks it became very thin in the centre. This was the situation on 9 September when Foch borrowed a corps from d'Esperey, who was relieved from immediate necessity by the retreat of von Bülow. He placed this corps on his left flank, moved one of his own corps from that point and placed it opposite the attenuated German centre, held by the Prussian



was left no choice but to retreat; second, the original German plan drawn in Berlin before the war called for an army of 2,000,000 to follow the attacking army. That army failed to appear.

Von Kluck's retreat left von Bülow's right flank exposed and he also had to fall back, Franchet d'Esperey pressing him all the way across the Marne in a vigorous battle. Still farther east was von Hausen, before whom stood Foch with the newly formed 9th Army. It was here that General von Moltke had expected to break the French line. He did not relinquish his plan because of von Kluck's withdrawal to the Ourcq. Reinforcing von Hausen heavily he poured his ultimate strength against Foch, whose centre was at La Fère-Champenoise. The Frenchmen took the punishment Guards. Then, late in the afternoon, he sent it forward against the Guards. It cut them through like a knife going through cheese. At the same time he ordered a general attack all along his line. The result was that von Hausen's army, cut through in the middle, broke into disorderly flight, streaming northward. The French pressed on after them, and followed them to the Aisne, the Duke of Württemberg and the German crown prince shifting their lines on the east, so that they kept touch with the retreat.

The battle of the Marne, as history has named this general engagement, was fought on a line 90 miles long, but within its scope were two encounters which, in previous wars, would have been called great battles. One was on the Ourcq River, where Maunoury with 200,000

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1 French and Americans advance to grenade attack

2 British machine-gun squad repelling German massed attack

1 French soldiers attacking house under rain of shells
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2 French direct volume of smoke and flame against Germans
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men met and fought off von Kluck with 300,000 men for four long days, until at last von Kluck, fearing to be caught on his southern flank, moved off on the morning of the 10th and left his adversary in possession of the field. The other was at La Fère-Champenoise, where Foch, after being beaten on each flank, cut through his opponent's centre at the moment of crisis and made a yawning chasm in the great German line. Joffre's plan was excellent, and all the French armies fought well, but it was Foch's genius that lifted the engagement from the level of a drawn battle and made it a great French victory. Of this general the commander-in-chief said, in allusion to the work of 9 September, that he was "the first strategist in Europe."

In the battle of the Marne the French fought with fierce courage, throwing themselves unstintedly on their antagonists, who were better supplied with long range field guns and machine guns. Their light artillery, however, the 75's, proved their superiority, and without them the battle could not have been won. As it was, more than half of the 300,000 casualties were on the French side. But the battle was worth what it cost. It saved France from the heel of the conqueror. It saved Europe from passing under Teutonic domination.

One other feature of the battle remains to be noticed. East of Foch stood De Langle de Cary and east of him Sarrail, his right running northeasterly to the defenses of the fortress of Verdun. Against these two armies pressed the legions of the Duke of Württemberg and the German crown prince in bitter attacks. They could not break through but inflicted heavy losses before they were forced to draw back to keep touch with the general retreat to the Aisne. It was during these days, 12 September, that the Germans seized the strong position of Saint Mihiel, south of Verdun, and held it until it was taken by the troops of the United States just four years later to a day.

Another affair, not a part of the battle of the Marne, but synchronized with it, was the second battle of Nancy. This city had beaten off one attack when the Germans moved forward after their victory at Morhange. Two weeks later they moved forward again, more than 300,000 strong. It was their object to take the city and come in behind the eastern end of the line that defended the Marne. Opposed to them was a French army under General Castelnau, much weakened by having to send troops to the armies engaged to the westward. It held a defensive position in the hills from Pont-à-Mousson to the little river Meurthe, covering Nancy. The kaiser himself was present to encourage the Germans and to make a triumphant entry into Nancy if his army was victorious. General Castelnau proved himself a master of defensive tactics many times in this war, and this battle was no exception. The enemy fell heavily on his lines but were beaten off with great losses. At the end Castelnau stood firmly in his tracks, and the Germans gave up the struggle. Had they won, they would have closed in behind Sarrail and DeLangle de Cary, defending the region around Verdun, and it would have been rare good fortune on their part if they had escaped complete encirclement. At best they would have been forced southward and Verdun, the buttress of French strength in this region, would have remained in German hands during the war.

7. The Race for the Sea.—When the Germans were forced back across the Marne they did not stop until they had crossed the Aisne, 40 miles north of the scene of their defeat. The allied armies pursued vigorously and crossed the river hard after them. They did not go much farther; for the Germans entrenched themselves in the hills overlooking the Aisne. For several days there was a ding-dong battle along the whole line, the most notable feature being the fighting of the British near Soissons. After crossing the Marne on the 9th General French recovered his fighting spirit, and from that time on the British army did all it could have done.

Here began trench warfare for the duration of the war. Two systems of trenches were constructed from the Oise to the Swiss border, between them the cheerless waste of No Man's Land. To locate the battle-line at this time take a map of France and begin at the Oise just south of Noyon, then pass the pencil eastward to Craonne, on the Aisne, a distance of 40 miles, then carry it eastward around the northern side of Rheims and on to the northern defenses of Verdun, thence southward to and around the western edge of Saint Mihiel and due east to Pont-à-Mousson, on the Moselle, and thence southward to the Swiss border. The result will show where the general line stood 20 Sept. 1914. Rheims was thus left to the French, but it was won by General Foch after hard fighting. At once began the demolition of its splendid cathedral by the German artillery. The deed was defended on the ground that the cathedral towers were being used as observation posts by the French, an allegation that the French denied. Battering this handsome cathedral into ruins was bitterly resented in France and shocked the feelings of the neutral world.

The first efforts against the Aisne line showed General Joffre how useless it was to attempt to defeat the entrenched enemy by direct assault, and he tried to turn his line. He moved General Castelnau and most of his army from Nancy and placed them on his extreme left flank with orders to pass around Noyon and get behind the German line. Castelnau acted promptly, but when he turned around Noyon he found before him the crown prince of Bavaria, his old antagonist at Nancy, and there he halted, his army facing east. His efforts to get behind von Kluck thus proved futile. Trying again Joffre assembled an army north of Castelnau's, giving the command to Gen. de Maud'Huy with orders to strike in behind the elongated German line. De Maud'-Huy made the attempt, only to find that the Duke of Württemberg was before him with an ample army. The practical result was that the entrenched line was extended from Noyon to La Bassée, step by step, and thus was formed that great angle which disfigured the map of France throughout the remainder of the war.

In the latter part of September General French became anxious to move northward, where his forces would be nearer their bases of supplies and have the added incentive of fighting to protect the Channel ports, that were, in a sense, the outer defense of Britain. As soon as French troops could be found to

replace them in the Aisne line Joffre consented to the transfer, which was made between 3 and 19 October. The object of the Allies at that time was to recover Lille, which von Kluck's cavalry had taken in August, and pushing on to the northeast to touch hands with King Albert at Antwerp. If the movement succeeded the international battle line, turning north at Noyon, would be continued through northern France and central Belgium, so that the Germans would be kept away from the Belgian seacoast. It was even hoped that Liége might be recovered and the invaders deprived of their main line of communication in the north.

To carry out this plan it became necessary for Antwerp to hold out against the Germans who were pressing it as hard as they could. With its outlying forts and redoubts it was considered the strongest place in Europe, next to Paris. Against these forts the great howitzers of the enemy were concentrated and a bombardment was opened on 29 September. The stories of Liége and Namur were repeated. Fort after fort crumbled, and by 7 October the city was in flames, so that the king dared not longer risk the capture of his army. As it was, he had stayed too long—at the urgent request of Mr. Winston Churchill, of the British Cabinet. That impetuous man visited Antwerp after the French staff and King Albert had decided to withdraw, and by offering British aid induced them to stay two days longer. The promised help did not arrive. Only a division of marines came into the city, and a division of infantry arrived at Ostend without being able to reach Antwerp. As the Belgian force moved out on the 8th the Germans pressed northward to cut them off. All escaped but one division, which was forced to cross into Holland and submit to internment. The Belgians drew back toward France, leaving their enemy to occupy the coast as far as Nieuport. Zeebrugge and Ostend thus fell to the Germans, who made of them submarine bases, from which much damage was later done to British shipping.

8 The German Drive for the Channel Ports.—Early in October the German High Command formed a new design. It had failed in its great objective of destroying the French army and taking Paris. It now wished to reach the Channel ports of Dunkirk, Calais and Boulogne, cut the British line of supplies, and place the southern coasts of England within reach of the long-range German cannon. If it could extend the line directly west from Noyon to the sea it would be materially shortened, the French would be cut off from the British and made an easier victim of later campaigning, and a large and wealthy portion of France would be brought under German control. If the line reached the sea south of the Somme all the work of dislodging the invaders would have to be done from a line still farther south, and it is doubtful if it could have been carried through successfully. Here, as in the Marne campaign, the Germans failed by a narrow margin. The design pleased the German people because it was directed against Great Britain. The kaiser himself went to Flanders to cheer his troops, and his whole available strength was put into the effort.

Joffre's action in defense was not originally a mere act of resistance. It began as an offensive, the object being to close the gap between de Maud'Huy, whose northern flank was near La Bassée and the Belgian army which, having moved out of Antwerp on 8 October, was falling back along the Belgian Coast. There was still hope that the wavering line could be stabilized somewhere near Antwerp. If that city could not be saved, possibly Zeebrugge or Ostend could be made the northern terminus of the line of defense.

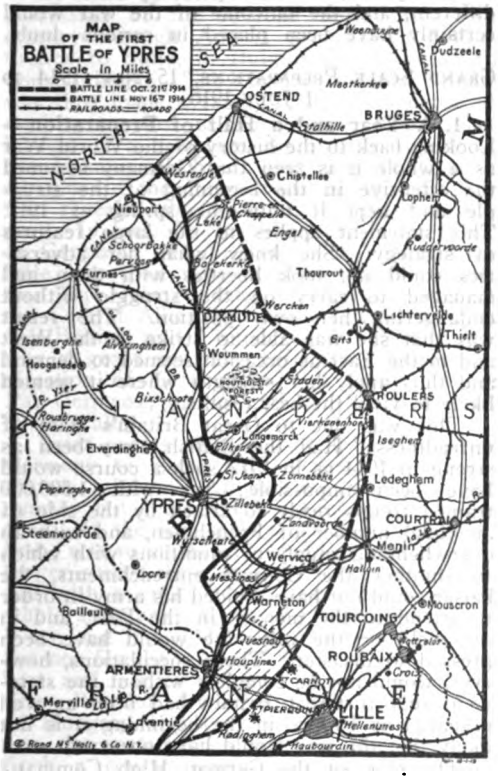
North of La Bassée the line was held, for the most part, by the British, as far as the northern outskirts of Ypres, in Belgium. Farther on it was held by some French troops, south of Dixmude, and beyond this to Nieuport, on the sea, it passed into the hands of King Albert's army, which had withdrawn from Antwerp along the seacoast, followed by the German army that had pressed it out of that city. Besides these main elements, the forces contained a corps of Indian troops, Ghurkas, Sikhs and Rajputs, long trained to fight for the British in India. They had been landed at Marseilles and carried thence to the areas behind the British lines, where they first served as supporting troops. There were, also, native troops from Africa, Sengalese, Moroccans and Turcos, fighting with the French. It was a striking complex of nationalities assembled to wage with the last available ounce of strength the battle for the preservation of civilization. Europe had seen nothing like it since the hosts of Martel met the Moslems at Tours in 732 and drove them south of the Pyrennees.

To direct operations in the north Joffre sent General Foch, whose splendid work at La Fère-Champenoise and Rheims had revealed his eminent military capacity. Hither came, also, on a visit, the aged General Roberts, of the British army. He wished to see again his beloved Indian corps, most of whose native officers looked on him as their best friend. He was handsomely received and spent several happy days in the camps. Looking over the plans Foch had made for the battle he said simply, as was his way: "You have a great general." On this visit he was stricken with illness and died at British headquarters on 14 November. Between Foch and French was ever good understanding, and the British soldiers, realizing how completely their battles were for the safety of the empire, spent life and strength as few other soldiers have spent them. On 20 Oct. 1914, the Allied line was well established though thinly held. Including de Maud'Huy's sector, from Albert to La Bassée, it was 100 miles long, and its defenders were about 500,000. Against them were thrown probably three times that number, fighting under the eye of the kaiser himself. Just as the battle began, 22 October General von Moltke, German Chief of Staff, retired from office on the plea of bad health. He was succeeded by General von Falkenhayn.

To break through the Allied line the Germans had the choice of four points of attack: Nieuport, Ypres, La Bassée and Arras. If they had concentrated all or most of the striking force at either of them they could hardly have failed to break through to the coast. They chose, however, to attack at all simultaneously, and they failed at all.

The first attempt was at Nieuport, on 18 October. The Belgians were exhausted and

dispirited by their retreat from Antwerp, but they met the attack bravely. Nevertheless they were being pressed back steadily when three British monitors, built for service in shallow water, got inshore and opened fire on the Germans on the beach, driving them inland several miles so that Nieuport itself was saved. The attack was renewed a few miles south of the town with great force. The Germans crossed the canalized Yser and seemed about to press on to the rear of Nieuport, when the Belgians managed to construct a dam across the canal, so as to flood the area held by their foes, who fell back with some losses. The battle then shifted to Dixmude, still farther south. Here again the superior force of the



Germans seemed about to carry the day when their opponents cut the dikes and let the waters of the canal flow over their field of battle. The Germans were caught in the flood, their artillery was swept away, a large number of men were drowned, and the survivors were forced to scramble to the small pieces of high ground, where a great many were made prisoners. This feature of the general attack lasted from 18 October to 10 November and was hotly contested at all times. It was a signal failure for the Germans.

Four days after it began, 22 October, they opened a severe battle against Smith-Dorrien, who stood with the British second corps at La Bassée, continuing it with intense fighting for 10 days until 2 November. The British were outnumbered but fought courageously although they suffered severely. When the Germans grew tired of attacking they pushed the British line back two miles, losing a great many men, but they did not break through. Probably they would have succeeded if they had brought up fresh troops and kept up the fight a week longer; for the second corps was almost at the limit of endurance, and no re-enforcements were in sight. But by this time the kaiser was putting all his strength into the attack on Ypres and drew off some of his troops to that area. The battle of La Bassée thus came to an end, and the net result was a German defeat.

Meanwhile, the Germans had opened a third battle at Arras, where Gen. de Maud'Huy was confronted by the army of General von Kluck, who attacked on 24 October. After fighting two days without success the battle receded. Then Gen. de Maud'Huy assumed the offensive and forced back von Kluck until the town of Arras, which had suffered severely from the German bombardment, was out of danger. The battle of Arras, 24 October to 1 November, was rated by the Germans as one of their important engagements. It was of the greatest importance to the Allies; for if the French had given way at this point, the British armies in the North would have been completely divided from the French, and would have been forced to surrender or withdraw under trying circumstances.

The fourth and most formidable of these attempts to reach the sea was made against Ypres, defended by the first British corps under the immediate command of General Haig. On 20 October Haig's men were four miles northeast of Ypres. At that time the two battles to the south, just described, had not been begun. The Germans had screened their operations so well by cavalry that General French did not know how far their concentration had proceeded. Bent on carrying forward the plan agreed upon between him and Joffre, he ordered Haig to move forward, if possible, with the hope that he might reach Ghent and Bruges, and open the way into northern Belgium. Haig's men had just arrived from the Aisne and were tired, but they responded with firmness to the order to advance on the 20th, and in doing so brought on the first battle of Ypres. The Germans were on their front in overwhelming numbers and threw themselves on the British most furiously. South of Haig's corps were Allenby's cavalry, the third British corps, under General Pulteney, and a French cavalry corps, under General Conneau. South of Conneau came Smith-Dorrien, whose battle at La Bassée has been described.

When Haig was given the order to move forward, if conditions on his front warranted he was four miles northeast of Ypres, astride the road to Bruges, with a front eight miles wide. He tried to execute the order on the 21st. The Germans were massed in front of him and attacked furiously. It was soon evident that he would have all he could do to hold his own. Joffre promised to send reinforcements, but he gave warning that they could not arrive before the 24th.

The interval was a period of bitter combat. Attack after attack was delivered, now at one point and now at another. Frequent breaches were made in the lines, but the Germans seemed to have had little idea what to do when they

had gone through and the British always repaired the damage before serious consequences occurred. The Germans were trained to mass tactics and lacked initiative enough to utilize a new situation. The expected assistance arrived late on the 23d and early on the 24th, and conditions changed for the better, though they still remained serious; for despite the help from Joffre the Germans were greatly superior in numbers. The exhausted defenders had no opportunity to obtain rest and continued for days in the trenches, where they had to repel many charges.

From the 24th to the 29th the battle was waged fiercely along the line from Zonnebeke to Hollebeke, here one thrust and there another. On the 29th the enemy attacked in overwhelming force all along this part of the line. There was nothing to do for the defenders but to stand in their tracks and die or beat back the tide that ever flowed on. Many a unit was wiped out or reduced to a handful of men, but there was no surrender. For three days the terrible struggle went on. On the 31st a French corps and a body of cavalry arrived and the Germans were forced back from the positions they had gradually won in the preceding days.

But the battle was not over. The kaiser was determined to have Ypres and kept bringing up other troops. These movements produced a lull in the battle. On 6 November the bitter struggle was renewed and continued for three days. Then came an interruption. On the 11th two brigades of Prussian Guards were brought up, and the kaiser made an earnest appeal to them for a victory, giving the encouragement of his presence. They were his favorite troops and they went forward with the parade step. The British fired coolly and with telling effect, but the Prussians penetrated the British trenches. Then they hesitated, as if they knew not what to do next. The British left them no time to determine. A shower of shrapnel threw them into confusion and then the British charged and drove them back into their trenches. This was the last German effort in the first battle of Ypres.

While this period of fighting was going on east and southeast of Ypres, equally heavy attacks were made on Bixschoote, five miles north of the town. If the place had been taken Ypres would have fallen and the British would have been forced to retire. Bixschoote was defended by General Dubois, with the ninth corps and some French Territorial troops and cavalry. With the greatest courage his men fought off the German attacks, inflicting great slaughter. By 15 November quiet reigned in this part of the line also. A few days later winter fell on the trenches, with rain, sleet and snow, and aggressive military operations ceased.

On the 17th another French corps arrived, sent by Joffre, of whom it was said in another connection that there was never a time when, in dire need, he could not find a fresh division to relieve a hard-pressed sector. The new arrivals gave General French an opportunity to withdraw his troops for the recuperation they so much needed. Through four weeks they had stood the heaviest encounters the Germans could deliver against them. They had died in great numbers, 40,000 killed and wounded out of something more than 150,000. One division, the seventh, lost 356 of its 400 officers and 9,664 of its 12,000 rank and file. The German losses are not known, but they must have been far in excess of the losses of their opponents. The kaiser had made a stupendous effort, based upon the theory that if men were sent forward persistently in great masses they would carry any position. The theory failed here, as in other battles in this war. When the fighting was over, the Channel ports were safe from the hands of the ambitious emperor. If he had struck for them when he first entered Belgium, instead of chasing rainbows in the valley of the Marne, the story would most probably have been different, and the outcome of the war would certainly have been placed in serious doubt.

GRAND SCALE PREPARATIONS, 15 Nov. 1914 TO 1 JULY 1916.

1. A Year and a Half of Preparation.—Looking back to the history of the World War as a whole it is seen that Germany assumed the offensive in the beginning of the struggle and kept it until the spring of 1917. This statement applies to the large features of strategy. She knew what her adversaries could do, took liberties with them and managed to carry on the struggle without endangering her own position. The result was that she was able to strike in the West and in the East as occasion seemed to demand and thus apply her strength where it seemed likely to yield the best results.

This was due to Great Britain's state of unreadiness. Had the British army been as strong in 1914 as in 1917 such a course would have been impossible; for with 1,500,000 trained troops ready to attack by the side of an equal number of Frenchmen, and with an overwhelming supply of munitions with which to smother the German entrenchments, the kaiser could not have divided his army in order to attend to the menace in the East, and in one field or the other he would have been pressed to disaster. These speculations, however, would not be complete without the statement that if Great Britain had been as well prepared as France in the beginning it is not likely that the war would have occurred.

The plan of the German High Command in 1915 was well made. Granted that Great Britain would not at first become a serious factor in the war and that France alone could not do any great things, she contented herself in 1915 in playing a defensive game in the West and throwing her entire surplus energy into the Eastern theatre of operations. It was already evident that Austria was no match for Russia, not even in a defensive war. Nor could Bulgaria and Austria combined deal with Russia and Serbia. Strong German efforts were necessary here if the balance was to be kept even.

For the time being results seemed to justify her expectations. When the year opened the Russian army of General Brusiloff was south of the main passes of the Carpathians, ready to March through the plains of northern Hungary, and the Entente Allies were talking confidently of an expected capitulation by the

eastern half of the Dual Empire. Then followed the battle of Dunajec, which forced Brusiloff to retire from the Carpathians with the rapid re-conquest of Galicia. This campaign was not ended before the great German drive on Warsaw was begun, and by the end of the year Poland was occupied and Riga was all but held in the tight German fist. So completely was Russia's attention claimed that she could do nothing to help Serbia, and all that luckless country was overrun but the southwestern corner. It was only by prompt action that the Entente Allies could fortify and hold Salonica, in Greece, and thus bar the Central Allies from that important means of access to the Ægean Sea.

By these operations the Germans came into possession of the railroad from their own country through Austria to Nish, in Serbia, thence to Sofia, in Bulgaria, and thence to Constantinople. The "Berlin-to-Bagdad" route was thus made a reality. It was a means of sending supplies to Turkey and helping her inaugurate a campaign against the British at the Isthmus of Suez; and it gave a great stimulus to the Pan-German sentiment. The war revealed the weakness of Austria-Hungary. In fact, she was like putty in the hands of Germany, and Bulgaria and Turkey were little less than dependent provinces. Greece was kept from coming over to the side of the Central Allies by nothing but the fear of the British and French fleets. Before the war a great central confederacy under the direction of Germany was a dream of the Pan-Germans; at the end of 1915 it was all but a reality.

Later events showed how little it profited Germany to spend 1915 chasing this Southeastern rainbow. All that she gained in that quarter but increased her obligations to defend. If the day came when her strength at home was so much exhausted that she could no longer succor these outlying states they would fall with a crash which would endanger her whole structure. Her real menace was in the West, and it would have been better for her, but not for the world, if she had given it her best and earliest efforts. Save Galicia and draw Brusiloff from his threatened conquest of Hungary, if necessary, but after that confine the eastern campaigns to the defensive. Such a course would have enabled her to throw heavy armies against the forces in France and Flanders at a time when they were little prepared to meet her.

Meanwhile, the task of raising an army was going forward in Great Britain in a truly British manner. On 6 Aug. 1914, Parliament voted an increase of the army by 500,000 men, to be raised on the voluntary principle and voted a credit of £100,000,000. The preceding day Lord Kitchener had been appointed Secretary of War, and he immediately issued a call for 1,000,000 men. To the troops who went to France in the first expedition he gave the uncomforting assurance that they could expect no reinforcements from across the Channel for at least six months.

The spirit of the British people was all that could be desired. Recruiting offices were swamped by the numbers that offered, and men stood in line day after day to get up to the doors. The greatest difficulty was to obtain equipment and supplies. To put into operation the vast and intricate machinery of production and distribution necessary to fit out an army demanded organization and reorganization. During the first months the newly recruited men suffered much inconvenience and some hardship because the supplies were not ready. To manufacture arms and artillery required even greater time. Existing plants were inadequate and trained mechanics were lacking to produce half of what was needed. Moreover, when the war began British labor, long schooled in the idea that wars are made by capitalists and for the benefit of capitalists, did not fully realize how vitally the outcome would affect the very basis of British life. It took time and some disasters to show them how essential their efforts were to the success of the British arms.

The war found British political life in its accustomed jangling state. Party spirit had to be subdued, and a prime minister had to be found in whose ability and disinterestedness the people had confidence. All these elements of internal weakness were well known to the Germans, who were as well prepared for war in economic as in military matters. But their delay in the West gave the British people the opportunity to remedy these deficiencies. In fact nothing could have worked better to show the British their defects than the very triumphs which Germany made in the Southeast. There is nothing the Briton holds more essential than the preservation of the empire. To talk about "Berlin-to-Bagdad" was the German's strongest challenge to the Briton.

Throughout the autumn and winter of 1914–15 vast preparations went on in camp and factory. Compared with what had been done before the war, and what the average man expected when the war began, the results were excellent; but compared with what was needed they were not satisfactory. The situation demanded every soldier the country could spare from industry and every ounce of industrial energy in the munitions works that could be spared from the production of the essentials of life. To obtain such results no means were adequate short of compulsory service. Every man in the United Kingdom ought to be at the disposal of the government to do that part in the war which he could do best. Such was the course pursued in France and in Germany. But it was a course as foreign to British ideals as to American ideals. The existing voluntary system was firmly rooted in the British democracy, and a democracy changes its point of view slowly.

By the end of 1915 it became evident that the voluntary system had yielded to the government most of the men it was going to yield. While a large number had joined the colors it was evident that there was still a great number who would never join under the voluntary system. It was also observed that a proportionally large number of these were persons with nobody dependent upon them. Opinion, therefore, slowly formed for forcing such persons to take their share of the burden of national defense. It came to its triumph when on 14 May 1916, Parliament passed a general conscription act applying to all males from 18 to

41 years of age. Passage of the law not only made it certain that the full soldier strength of the country would be called out, but it abolished the sense of inequality which dwelt in the popular mind as long as many able-bodied men remained free from military service. We must, however, not forget that the voluntary system served England well in the beginning of the war. By the end of 1914 2,000,000 Britons were in service in the army, and a large number volunteered during the following year. In May 1916 it was said in Parliament that more than 5,000,000 men were then in the military and naval service of the country.

Equally important was the lack of munitions. It did not cease until the Ministry of Munitions was created in July 1915, with Mr. Lloyd George at the head. His influence with the labor unions was great, and he induced them to waive some of their restrictions on industry. He well said that if the British and French armies had been as well supplied with shell as their opponents they would have been able to drive the Germans out of France and Belgium by mid-summer in 1915. No story of the campaigns on the western front is complete without full recognition of that other campaign in Britain herself to bring her resources of men and things into as full state of service as Germany had at the beginning of the war. It was not fully accomplished until late in 1916. While it was going on the men in the fields of Flanders had to mark time, relying to a large extent on the efforts of the French to enable them to hold what they had.

Not that the western front was quiet throughout the year 1915. On the contrary, it saw some severe encounters, most of them initiated by the Entente Allies. They were all based upon an imperfect realization of the changed conditions of war. They were begun with the idea that vigorous action would enable the attacking party to break through the enemy's line of defense and produce consternation in his rear. They all failed because there were not enough artillery and trained soldiers. These failures, however, had their uses. They taught the leaders what mammoth efforts had to be made, and they contributed their parts to the necessary work of wearing down the German morale and man power.

2. France in Aid of Russia.—During the winter of 1914–15 and early in the following spring the French conducted several isolated campaigns that had an important influence on operations in the East. For France was a faithful ally and it had long been agreed between her and Russia that when, in that great war which both nations had expected, Germany flew at one the other would strike her in the rear. As soon, therefore, as she turned from the first battle of Ypres to the eastern front, France proceeded to carry out her promised part and by severe blows forced Germany to use reserves which otherwise would have been sent to the East. To this process Joffre, speaking to a careless inquirer, gave the name "nibbling." But he was under no delusion about the situation. He was fighting as he had to fight to bring relief to a hard-pressed ally. More than that he would not undertake. France had lost heavily in the campaigns of 1914—some estimates putting the figure at nearly 1,000,000—and it was evident that the end was not yet. Wise policy demanded that the strength of her armies be conserved to meet the great blows that would come in good time.

The first of these isolated operations was undertaken in Alsace in December 1914, while General von Hindenburg was making his assault on the Bzura-Rawka line. A feint was made along the western slopes of the Vosges Mountains, and in the extreme southwest, opposite Mühlhausen, there was an advance until the town of Thann was reoccupied and the village of Cernay, the key of Mühlhausen, was threatened. After long-continued fighting the French took Hartmannsweilerkopf, from which they could see the great manufacturing city, not more than 10 miles away. Farther they could not go. Mühlhausen remained in German hands, but 350 square miles of Alsatian territory, including several villages, were redeemed from the hands of the Teuton and the tricolor was unfurled in their market-places. In this fighting much of the success was won by the Chasseurs Alpin, who descended the snow-covered mountain sides on skis.

Another effort was the attack known as the battle of Soissons. It began on 8 Jan. 1915, just as the Hungarians were demanding German aid to repel the Russian movements in Bukowina. At Soissons the French held the town, situated on both sides of the Aisne, and the flat meadow beyond with the foothills, while the Germans were on the ridges that marked the beginning of the northern plateau. A weak division, about 12,000 men, held the French lines and was ordered on the 8th to take two hills that dominated the plateau in the region east of the town. They carried out their orders with good effect, but the Germans brought up two corps and counterattacked with great energy. Heavy rains had come in the interval, and the flooded river had carried away two of the three bridges by which ammunition and reinforcements could be forwarded. Thus cut off from succor, the French troops were hopelessly outnumbered and forced to escape as well as they could. By hard fighting the major part escaped to the south bank, losing 5,000 men and a considerable number of guns. Encouraged by their success the enemy now made a determined attack in mass against Soissons itself. Here the bridge was intact and the French brought up reinforcements and repelled the assault. The Germans spoke of the battle of Soissons as a great victory. It was an unsuccessful French offensive which involved German losses of nearly 10,000 men and resulted in a German advance of one mile on a three-mile front. It was fought between 8 and 19 Jan. 1915.

A third attack was delivered in the Champagne region during February and March, at the time when von Hindenburg was winning the battle of the Masurian Lakes. In Champagne the battle line ran east and west between Rheims and the Argonne Forest. Behind the German position from five to eight miles ran a railroad on which the army was accustomed to bring up the supplies for a long sector. If it was cut the German transport service would be seriously weakened and it might become nec-

essary to reorganize the line of defense. General Joffre's purpose, therefore, aside from drawing reserves away from the East, was to reach this road or bring it within effective range of his artillery.

The battle opened on 16 February with a violent artillery duel followed by an infantry charge. It was directed against the German position opposite Beauséjour Farm, where there was a depression flanked by two hills on which the enemy had strong artillery defenses. The charge failed but it was renewed from day to day and at last succeeded on the 27th when some French Colonials were brought up. Hard fighting now ensued until the arrival of reserves from Flanders in the middle of March. At its close the French had not reached the coveted railroad. They had lost severely, more than 100,000 men in killed and wounded, while their opponents, fighting on the defensive, had lost less than that number. Aside from its effect on the fortunes of the Russians, the battle of Champagne must be considered a French defeat.

These operations stand out as distinct strokes in a series of minor operations from the Swiss border to the northern end of the French line at La Bassée, a distance of more than 400 miles. Sniping was constant, as opportunity offered. The artillery kept up its persistent work. Where the trenches were close enough together hand grenades were hurled from one to the other. It was at this time that trench raids were inaugurated, and they soon became frequent. They kept the men in training and were a means of gaining information. Now and again some more substantial attack was carried through, gaining a bit of trench, cutting off an obtruding angle, or seizing an elevation on which some machine guns or sharpshooters were stationed. In the Argonne, especially, there was much of this kind of fighting. The French line at this point ran along a gap in the forest, from Varennes to Vienne le Chateau, following a road from one end of the gap to the other. The Germans had pressed down toward this pass from the north, which was all important to the French, since it was the link between their armies on the east and west. Forest fighting went on here all winter, and the French had the better of it, gaining ground on the north and holding it. Still another movement that is noteworthy here was an attack by the French on the Heights of the Meuse south of Verdun. Here the Germans had pressed westward nearly to the banks of the river. There was danger that they would cut off communications and force the abandonment of the fortress. General Sarrail commanded the French forces here and had well won the thanks of the country for his faithful and skilful defense of the greatest fortress of the French frontier. In February he started operations to drive the intruders back from the edge of the Heights. He took Les Eparges and the high ground around it, which, when fortified, became a safeguard of Verdun on the southeast. At the same time operations conducted by other French forces near Pont-à-Mousson carried the Germans back from one to two miles. Saint Mihiel, at the angle between Verdun and Pont-à Mousson, however, remained safe in German hands. It was too strong to be stormed, and the French contented themselves with holding firmly the sides of the salient, knowing that the point would not be advanced if the sides remained intact.

In all this fighting the net results were small. It would be incorrect to say that this was no more than the commanders had expected. At that time neither side had that respect for the fighting qualities of the other that each came to have in time. Nor did either side fully realize the conditions and limitations of the new style of war. Painfully and slowly and at great cost in life they were to learn how hard it is to take well-defended trenches. If the armies that faced one another at the end of the first winter of the war could have known how long their struggle was going to be, and if the nations behind them could have known what sacrifices were to be demanded, it is doubtful if the contest would have been allowed to go on.

3. The British Struggle in Flanders.— The first battle of Ypres closed with the futile assault of the Prussian Guards on the British position, 11 Nov. 1914. The Germans had made many costly charges and were satisfied to suspend the engagement. Already heavy work had begun in the East, and their reserves were demanded for it. The tired British were relieved temporarily by French troops whom Joffre sent, but they were eventually back in the trenches, wading through mud and slush, standing sentinel in the wearying winter days, and always ready to challenge the foe.

This spirit became aggressive when it was learned that the enemy had withdrawn some of his troops to serve in the East. Some isolated attacks were made on his lines with good results, and this led the officers in command of the Indian troops in the trenches at Givenchy, two miles west of La Bassée, which the Germans held, to attempt to drive them from the latter position. An attack was opened before dawn on 19 December. Two lines of trenches were carried but the straggling dawn showed them unprotected on their flanks and they had to be abandoned in the succeeding night. The Germans seem to have decided to give the Indians a lesson. On 20 December they drenched their lines with shrapnel and trench mortar bombs and sent forward their infantry in heavy formation. The Indians in Givenchy fell back, and that important place passed into enemy hands. General French ordered up English and Welsh troops to restore the lines, which the Indians had given up on a two-mile front. By hard fighting this object was attained. The Indians had been two months in the trenches and were dispirited by the hardships, to which they were unaccustomed, and by their heavy losses. They never adapted themselves to the monotony of trench warfare.

This affair left the troops facing one another at this section in a state of tenseness, and another struggle of the same character occurred from 25 January to 6 February. It was brought on by the Germans, who were supposed to wish to have some success for celebrating the kaiser's birthday, 27 January. They succeeded in taking Givenchy but were

promptly thrown out. They took position in a brickfield where the kilns and stacks made excellent defenses, and some bitter fighting ensued before they were at last driven back. Much hand-to-hand fighting occurred in this region and the losses were severe on each side.

Thus two sharp blows had been given in this region and bad blood was nowise abated by the results. A third was about to follow, and it was to be a much greater effort than either of the others. By the end of winter the British had been heavily reinforced. In November 1914 the Territorial troops, fresh from intensive training in England, began to come over by battalions. By the end of February they had arrived in divisions. A whole division of Canadians were also on the spot, full of that vigor which the American air gives to those who have breathed it deeply. There were, also, troops of British stock assembled from many far flung imperial garrisons, shivering in a climate that had nothing in common with the tropical scenes from which they had been abruptly shifted. In all, General French had about 500,000 men when spring opened. He organized them into two field armies, in each of which were three corps. Over the first army General Haig had command, over the second was General Smith-Dorrien. The first stood on the southern part of the British line, from Estaires to La Bassée, where it joined the French army of Gen. de Maud'Huy. The second held the front from Estaires north to the point of the Ypres salient, where it connected with the French forces organized into an army under General D'Urbal. This was the largest body of British soldiers assembled up to that time and it was better equipped with arms and artillery than any other force. But for all that, experience was to show that it was not well enough supplied for the demands of the new type of warfare.

General French and his officers were confident that they could break through the German lines. The people at home shared their feeling, and there was a general expectation that something would be done commensurate with the great effort that had been expended. It was thought that only the coming of spring and the diminution of the mud that filled the trenches and covered the surface of the north country were needed for the realization of these hopes.

The scene selected for attack was that which had witnessed the two affairs just described. Three and a half miles north of Givenchy was Neuve Chapelle, a straggling village which had been in British hands early in the war. It was later taken and held by the Germans and made an inconvenient salient in the British lines. Behind it was the Aubers Ridge commanding the approaches to Lille. To cut through the lines here and seize this ridge would have an important effect upon the whole German position in this region. After due deliberation it was decided to make the attempt, and preparations were made in the most careful and elaborate manner.

By this time it was known to all men that the war was an artillerists' war to a larger extent than in any preceding struggle. The Germans had foreseen this fact, but it was left for the French, with their keener wits, to show how the best use was to be made of the vast numbers of cannon that were assembled. In their fighting in Champagne they had used what they called the curtain of fire, later known as the "barrage." Placing their 75's close together side by side with identical range and firing rapidly they were able to drop a continuous line of exploding shells at a given distance. Then by increasing the range by successive brief intervals they gradually moved this curtain forward. As it went it demolished wire entanglements, trenches and their defenders and permitted the infantry, who were held in check as they advanced behind the moving curtain, to pass unscathed across No Man's Land and occupy and organize the enemy's trenches. By raising the range still more the artillery could make it impossible for the enemy to deliver his counterattack before the newly established lines were safely occupied. The value of the barrage against entrenchments was well established in the war. It was at Neuve Chapelle that the British used it first. Although it appears simple to the inexperienced observer, it is a very delicate affair and depends for success upon exact co-operation between infantry and artillery, as well as upon good staff work and perfect transmission of orders by telephone.

At this point the British had control of the air and were able to mass their artillery without detection by the foe. At 7:30 on the morning of 10 March they opened the most concentrated fire the scene of war had yet witnessed. The troops were massed in the trenches in front of Neuve Chapelle and went forward at 8:05, when the barrage was shifted to the back German areas. The houses of the village were now leaping into ruins and no Germans in them were able to escape. At 8:35 the artillery shifted to the area back of the village, and the infantry followed into the ruined streets, where some dazed Germans were left to surrender. So far as Neuve Chapelle itself was concerned, the attack was a success. A hole had been blown in the German line a mile and three-quarters wide, and the British troops who had been assembled in the forward trenches were in the village safely established in newly constructed trenches. It was a part of the plan to have them followed with a strong column in support which would rush through the gap and seize the ridge to the east that led into Lille. This feature of the program miscarried for three reasons: (1) The gap was not wide enough to permit extensive operations through it. The German positions on each side of it enabled the undisturbed enemy artillery to enfilade the troops in the gap and confine them closely in their trenches; (2) the necessity of bringing up the supporting columns promptly was not understood, with the result that it was not until four o'clock in the afternoon that they were sent forward, and at that time the Germans had organized strong defenses on the ridge; (3) the intense bombardment had made such heavy demands on the stock of ammunition that there was not enough at hand to carry on the action on the scale that was necessary to insure success. The result was, therefore, that this action, which began so well, did not yield the full fruit that had been expected. The

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IN THE WAKE OF BATTLE

1 Ruins of Ypres **2 Ruins of Albert Cathedral**

1 French children watching arrival of Americans (Soulosse)
2 French peasant family return to find their home in ruins

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German salient was flattened out, but the further advance toward Lille was not realized. During the 11th and 12th the British made ineffective and costly attempts to widen their position. On the latter day the Germans made the expected counterattacks, but their thrusts were badly co-ordinated and caused little trouble to the British. On the night of the 12th General French, recognizing that the effort had spent itself, ordered the army to organize their trenches in the ground gained and give over the offensive. Although the battle of Neuve Chapelle yielded no territorial results comparable to the sacrifices, it taught the British a useful lesson in the conduct of massed attacks on enemy trenches. They lost 12,811 killed, wounded and missing and estimated that their opponents lost nearly 20,000.

This blow aroused the Germans to retaliate. On 14 March they assembled a great many cannon under cover of mists opposite Saint Eloi, a position just north of the Messines Ridge, at the inner point of the salient the Germans had driven into the line southeast of Ypres during the first battle at that place. If the position was taken, the entire British line in this sector would be in danger. The bombardment they opened on the British trenches at 5 P.M. is described as "tremendous," showing that they also had profited by the lesson of Neuve Chapelle, and it was reinforced by the explosions of two mines under the British defenses. Then the infantry attacked in heavy masses, forcing their opponents out of the crumbling trenches at many places. By bringing up light artillery they then enfiladed the position to which the defenders still clung, and by nightfall the village was in their hands. Under cover of darkness, however, the British organized a strong counterattack, which, delivered at 2 A.M., retook all the positions lost that were deemed of importance. In this battle the first of the Canadian regiments came under fire, the Princess Patricia's Light Infantry, with such good results that the spirits of both Canada and Britain were raised to an enthusiastic pitch.

One blow provoked another in this ding-dong fighting on the western front. Saint Eloi was a German offensive and the British reply to it was an attack, opened on 17 April against Hill 60, an important elevation in the flat country north of Klein Zillebeke. To take it would push back the German lines at a point where they were within three miles of Ypres. The position was seized by the British on the 17th, the Germans counterattacked on the 18th and desperate fighting followed on the hill itself until the 21st, when the Germans were driven off and the British remained in possession, with heavy losses on each side.

It was while this affair was in progress that the second battle of Ypres began, the German reply to the attack on Hill 60. The first step was a heavy bombardment of the town of Ypres with 42-centimetre shells. The object was to block the streets and interrupt the bringing up of reinforcements by the roads that led through the town. As these roads led to the northeast of Ypres and Hill 60 was on the southeast, it indicated to the British that the scene of attack was about to be shifted. Their forecast was confirmed on the evening of the 22d in a most gruesome way. The time was five o'clock and there was a steady wind from the northeast. Artillery observers noticed a bank of greenish vapor moving from the front of the German lines toward the Allied trenches. It came on along a front of more than four miles, part of it held by soldiers of the Ninth French Army and part, on their right, held by the third and second brigades of the Canadian division. The vapor rolled along by the breeze was asphyxiating gas. The Germans had prepared to use it, and in order to break the shock of horror to the minds of their own people had previously circulated the false story that the Entente Allies were using it. The French and Canadians knew not what it was until it was on them. Says General French: "It was at first impossible for anyone to realize what had actually happened. The smoke and fumes hid everything from sight and hundreds of men were thrown into a comatose or dying condition, and within an hour the whole position had to be abandoned, together with about 50 guns." In the Canadian trenches the fumes were less severe, and the men stood their ground, though many of them suffered greatly. To their left a gap had opened in the line four miles wide, leaving their flank exposed, forcing them to bend back their line and to hurry forward their brigade reserves. Fortunately the Germans did not advance hastily, probably because of fear of their own gas. The approaching darkness was some relief, also, and by the next morning General French had sent forward five battalions, which with the two reserve battalions of the Canadians had to repel the German attempts to penetrate the gap during the 23d. It was not until late on the 24th that effective reinforcements arrived, and by that time the losses in the lines were so heavy that the reinforcements did not restore security. The retiring French had abandoned their artillery and the reinforcements had no means of keeping down the artillery fire that raked the field over which they had to fight. The Germans continued to employ gas and the Canadians had a second encounter with it on the 24th; but they had learned that to fix a wet handkerchief over the face gave much relief and by sticking to their posts they observed that the gas quickly passed by, whereas those who ran were longer within its grasp.

The week of sheer slaughter that followed has no redeeming feature other than the courage of the men who met it. The Germans threw themselves with special vigor on the two Canadian brigades who carried themselves, as General French said in his report, "with a magnificent display of tenacity and courage." If there had been a break where they stood the enemy would have turned the whole eastern front of the Ypres salient out of its position, and the result would have been disaster. On 1 May General French ordered the troops on the east to be drawn into positions nearer the town. His lines of communication in the salient were under hostile fire from the heights north and south of the trenches, and thus lessened the difficulty of supplying the troops while he shortened his lines by three miles and gave opportunity to the occupants to take longer rest periods. The retirement was effected

quickly and without the knowledge of the Germans, who continued to shell the trenches after they were abandoned. Hard fighting continued until 13 May, when the Germans ceased to attack. They had been fighting for no territorial gains. To take Ypres at the expense of the British, to shatter their morale and to waste the strength of the British army was all they had in mind. They had not succeeded in the first of these objects nor in the second; but they had taken heavy toll of their adversaries.

The lesson of the battle was written plain for the eyes of all to read. The British army was fired with as great courage as any that ever answered the summons of battle, but it did not equal its opponents in organization. None realized this better than the British themselves. They took the lesson to heart, realizing that ultimate victory could not come until their own organization was improved.

The introduction of poison gas will ever be associated with the second battle of Ypres, although asphyxiating shells had been used earlier. The gas was chlorine and being drawn into the lungs produced acute bronchitis, congesting the face until it was lividly purple and producing most intense pain. Those who first encountered it ran backward, thus accompanying the gas as it was wafted onward. Running and gasping caused heavy breathing, which resulted in the inhalation of larger quantities of the deadly fumes. The British authorities set at work to provide respirators, and by 8 May the army was supplied with appliances that were effective for preventing the worst effects of the gas. The use of this gas and the stories of the excruciating pain it produced shocked the neutral world. On 7 May came the news of the destruction of the *Lusitania*. It seemed that the Germans were determined to give one proof after another that they were callous alike to the feelings of humanity and the esteem of civilized peoples.

4. The Allied Offensive of 1915.—When the second battle of Ypres occurred the British and French were prepared for a co-ordinated offensive against the German front at points south of the Ypres salient. It was their intention to cut through the intricate system of railroads in this portion of France by which the enemy got his supplies for the part of his line north of the angle at Noyon and south of Ypres. If such a blow succeeded it would necessitate the readjustment of a large section of the line. It would also force him to draw off reserves that otherwise would be used in the Russian campaign. The battle was undertaken primarily as the Franco-British offensive of the spring of 1915. The allied High Commands did not think that they were reduced to the necessity of keeping the defensive. The French army was called out to the extent of its numbers. The British army stood at 500,000, the greatest land army Britain had ever possessed. It was believed that they were sufficiently supplied with munitions. Certainly they had quantities far in excess of any that a preceding British army had possessed. It was spring and the time for an advance.

The Germans were cognizant of the British preparations and opened the second battle of Ypres and carried it on for three bitter weeks in the hope of drawing off the British forces and so preventing the movement. They produced such a critical state of affairs in the salient that the French were forced to open the battle in order to draw off the Germans from Ypres. It was a well-judged feature of the German policy that seeing themselves threatened by this double attack at a time when their general western policy was the defensive, they concluded that the best course was to anticipate one of the proposed blows. Their attack on the British succeeded in turning aside most of the energy that was due from that source, fighting while the French were still unready to strike a blow. When that blow came the British were so far spent that they were of little weight, and most of the attention of the Germans was given to the French. We cannot withhold our admiration for the good generalship and daring that would try this alert strategy, truly Napoleonic in concept, of dividing the foe and striking first one and then the other of the parts.

The British portion of the double spring offensive was against Aubers Ridge, near Festubert, a mile north of Givenchy; the French portion, known as the battle of Artois, was staged in the 10-mile sector between Lens and Arras, eight miles south of Givenchy. The pressure on the British lines at Ypres did not entirely stop the British preparations at Festubert; and General French opened his projected attack at that place on 8 May. It was a short and cutting thrust and netted him 8,000 casualties in a few hours without any noteworthy gain. On 16 May the attack was renewed three miles to the southward, at Festubert itself, but the gain was slight and the losses great. In both of these engagements the British suffered from lack of high explosive shells, which alone could destroy the enemy's wire entanglements. The same lack had been felt at the first and second battles of Ypres, but little had been done to remedy the deficiency. The reappearance of it in these two engagements and the resulting heavy sacrifices of life caused an outburst of indignation in Great Britain. The shell scandal, as it was called, was one of the painful experiences of Great Britain's war, but it led, finally, to a better organization of the War Department with a fuller realization of the altered character of warfare. How slowly the officials changed their views is shown by the fact that when General French returned from the scene of slaughter at Aubers Ridge he received a dispatch ordering him to send 20 per cent of his reserve ammunition to Gallipoli. It is difficult to relieve Lord Kitchener, Secretary of War, of serious blame for this situation. Splendid soldier as he was, and always doing his utmost for his country, he had not yet realized how much had to be done to make the British war machine equal to the demands on it.

The controversy over munitions became a chief subject of political interest at this period of the war. Mr. Asquith, the Prime Minister, was an optimistic man and could not be brought to see the need of more ammunition. General French made many requests to the Secretary of War and they came to the knowledge of the Prime Minister. The opposition newspapers took up the cry. But Mr. Asquith set the criticism aside in a speech in which he said that the army had all the ammunition it needed. At this time the Gallipoli expedition was demanding a large part of the products of the

munitions mills, which was another untoward effect of that expedition. After the battle of Festubert, General French took the extraordinary step of appealing to Mr. Lloyd George, submitting to him copies of his ignored requests with a memorandum of the actual need of the situation. At the same time he gave a startling statement to the London *Times* that laid bare the situation. The upshot was the overthrow of the existing government and the installation of a Coalition Ministry, with Lloyd George as Minister of Munitions. From that time matters improved. The public did not understand that high explosives were necessary in trench warfare. Ordinary shrapnel had no effect on entrenchments, dugouts and machine-gun nests, in making which much concrete was used. The more powerful high explosive shells were needed to pulverize these works, reduce the artillery to inefficiency, destroy wire-entanglements and thus make it possible for charging troops to advance without slaughter. General French was undoubtedly a man of little tact and he had acquired the reputation of a man who complains, but he was right in holding that the British suffered heavy and needless repulses at Ypres and Festubert because the ammunition was not in conformity with the requirements of the most modern type of warfare.

The French government had not failed, as had the British, to profit by the lessons of nine months of actual war. As soon as it found itself in the struggle it turned all its energy to the manufacture of heavy guns and ammunition. By the spring of 1915 it had made long strides forward in these respects. When it opened its portion of the double offensive, therefore, it was prepared to make a heavy impression on the German lines. It was not able, however, as we shall see, to cut them completely, largely because the Germans had also utilized the interval since the beginning of the war to carry forward the same kind of improvements. They had prepared such strong defenses in cannon, machine guns and trenches that even the improved means of offense were not able to obtain a decisive result.

It was 9 May 1915 that this offensive, the battle of Artois, opened, between Lens and Arras. In this region we are no longer in the flat and water-logged country that surrounds Ypres. The surface is broken with many depressions in which were stone or brick villages which made excellent machine-gun defenses. The German lines at this point made a salient about five miles in front of Lens, crossing the heights of Notre Dame de Lorette at the extreme angle and taking within their limits the villages of Ablain, Carency, La Targette and Souchez. The soil was chalky and easily cut into trenches with dugouts. At the southern end of the salient, two and a half miles from Arras, was an intricate series of trenches known as the Labyrinth. The position as a whole was one of the strongest in the theatre of operations, but to take it would be decisive for a large portion of the western front. It would mean the capture of Lens, important as a centre of roads and as the area whence France had drawn her most considerable supply of coal, so essential to her manufactures of munitions.

Against the place the French massed seven army corps and 1,100 cannon. General Foch, who was in superior command of operations along the entire French front north of the great angle at Noyon, came to the place and assumed direction of the attack. His plan was to use the tactics employed first by the British at Neuve Chapelle, and repeated later by the Germans at Dunajec, of blowing a great hole in the enemy's trenches and sending through massed columns before they could bring up troops enough to stop the movement. The Germans defending the position were von Bülow's army, which took a prominent part in the Marne campaign of 1914, and it was reinforced with three new divisions a few days before the French began their battle, probably because they had received intimation of what was coming.

It was 9 May, the day after the British opened their futile attack against Aubers Ridge, that the French delivered their assault. The initial bombardment was the most intense yet seen on the western front. Says Mr. John Buchan: "It simply ate up the countryside for miles." The trenches from one end of the sector to the other were reduced to powder intermixed with broken guns, rifles and human debris. During the course of the day more than 300,000 shells were fired. The infantry went forward behind the barrage at 10 o'clock in the morning. On the southern side of the salient they crossed the trench lines for large gains, at one place two miles and a half. North of the point of the angle they were face to face with the ruins of Carency, which the Germans filled with defenders, and with machine guns on the top of the heights of Notre Dame de Lorette. It took four days to batter these places into ruins. Into the former 20,000 shells were thrown before it was taken. Under previous conditions the German line would have been broken and the attacking force would have swept on into Lens. But here a new situation appeared. The defenses were so intricately constructed that a break at one point did not carry the adjacent trenches with it. What happened, therefore, was that under the attacks of the French the lines of the Germans resolved themselves into a series of little forts, held by machine guns manned by resolute bands of defenders. To take these places required extravagant artillery treatment and careful approaches of expert marksmen. In these circumstances the advance was slow. It was not the less steady. The ruins of villages fell one after the other. At Souchez was a sugar refinery whose broken walls swarmed with machine guns. It changed hands several times but at length remained with the French. The Labyrinth required days of persistent fighting. One set of trenches but protected another, and underground passages enabled the defenders, beaten at one corner, to appear safely at another. By the end of May the French had beaten in the salient, but they had not taken Lens. The struggle went on as bitterly as ever but it was of little profit to either side. The Germans are supposed to have lost 60,000 men in the struggle, and the French could have lost few less. But as an attack the battle of Artois was a failure. Vimy Ridge, south of Lens, was the key to the position for which the French were struggling, and it remained in German hands when the fighting died down at the middle of June.

Now came the inevitable lull after a great effort. Great stores of munitions had been used up, and it would require time to collect what was required for another great attack. That such a renewed attack would be made went without saying; for it was of the Allied plan to keep trying until they at last found the means of breaking through the German resistance. Each attempt had its lesson. Neuve Chapelle showed that it was necessary to have great masses of reserves ready to follow the first charge through a breach made by masses of artillery. Second Ypres showed that it was necessary to have high explosives in vast quantities and to take precaution against gas. The experience of the battle of Artois confirmed the already established fact that the strongest entrenchments could be pierced, but also revealed the immense power of defense in scientifically constructed entrenchments lavishly supplied with machine guns. The Allies were encouraged by reflecting that they were ever growing in strength as the volunteers of Great Britain came through preliminary training. There was, in midsummer, 1915, no question about holding out in the West until Great Britain was ready. Germany herself had taken the defensive in the West, and the time was approaching to determine if her defensive could be broken.

The next great attack of the Allies came on 23 September, the British striking at Loos and the French in Champagne. In the three months' interval between its inception and the battles at Festubert and in Artois a steady series of small engagements occurred at various points in the long line. Sometimes the initiative was with one side and sometimes with the other, but the result was always the same. A heavy bombardment, a charge of infantry into a demolished trench, and then the inevitable countercharge, with the result that the place seized was held under distressing fire or given up because its retention cost more than it was worth. But the total result was little more than the steady loss of lives. The general situation was not affected.

The most notable of these isolated operations was the German attack, conducted by the imperial crown prince, on the French line in the Argonne Forest. This favored leader had not acquitted himself well in the preceding fighting, and murmuring against him had already begun in Germany. It is believed that he was allowed to have another try in the hope that he would restore his damaged reputation. He was reinforced until he had 50,000 men along a front of eight miles, and the movement was inaugurated on 20 June. The three weeks of fighting that followed was a series of infantry battles in small sections. The terrain lent itself well to machine-gun defense, being protected by undergrowth and many ravines and rocky ledges. It yielded the Germans an average advance of 400 yards on the entire line and was not commensurate with the sacrifice. The Argonne was long a debated region between the two sides, and many lives were lost before it was finally taken in October 1918, when the Americans and French conducted great flanking movements on each side, while American troops, at great cost, carried the forest lines northward by heroic efforts.

Throughout the summer preparations were going forward for a great Allied advance in September. The place selected for the main blow was in the Champagne sector, the scene of the battles of the preceding February. The object was to cut the railroads that supplied the German lines east of the great angle near Noyon. This done a general readjustment of lines would be necessary. In support of this main thrust plans were made for a strong blow at the defenses of Lens, chiefly to engage the Germans in the northern sector and prevent very heavy concentrations in Champagne. The particular point of the Lens defenses to be attacked was Loos, three and a half miles northwest of Lens, although the battle was pressed on a front that extended nine miles north and five miles south of Lens. In this supporting movement the British had the area to the north and the French the area to the south. In the main attack, in Champagne, the operations were conducted wholly by the French. The battle opened in each area on 23 September.

In the Champagne it extended from Auberive to Massiges, a front of 15 miles. The new French guns were present in the greatest abundance and there were vast stores of ammunition. The bombardment lasted two days. The German trenches had been constructed with great skill and strength in the chalky soil. They were intricately laid out and supplied with large dugouts. The advanced position consisted of four or five parallel lines and was 500 yards deep. The bombardment reduced it to powder. As the infantry came forward on the 25th the position was undefended except for stray machine guns manned by some survivors in the dugouts. Leaving detachments to "mop up" these survivors the columns went forward to the second line of trenches. As the men went they sang snatches of the *Marseillaise* and that other song of the Revolution, the *Carmagnole*. The second line was better defended by the German infantry and machine guns, while the hostile artillery had the French under accurate range. Now the losses were great, but there was no faltering. The men went on to the positions of the guns cheering and throwing themselves on the gunners in irresistible force. Orders now issued to bring up the guns and the batteries went forward in gallant style under bursting shells. "For the first time since the Marne," said an artillery officer, "we were galloping to battle, guns and limber jolting and shells bursting all around us." A part of the French line penetrated the second German line of defense. Late in the afternoon the advance had to be suspended on account of the heavy weather, which made it impossible for the artillery to obtain accurate observations. Next day it was resumed, but the Germans brought up reinforcements and the progress was more difficult. The French guns going forward were heavily impeded by the mud which soon churned up in the chalky soil. In the end, it was decided to give over the attempt to go farther and the French found that their total gain was from one to two miles on a 15-mile front. They had taken 25,000 prisoners, 150 cannon, and vast quantities of munitions and small arms. Their own losses were about 120,000; but the enemy's were larger still.

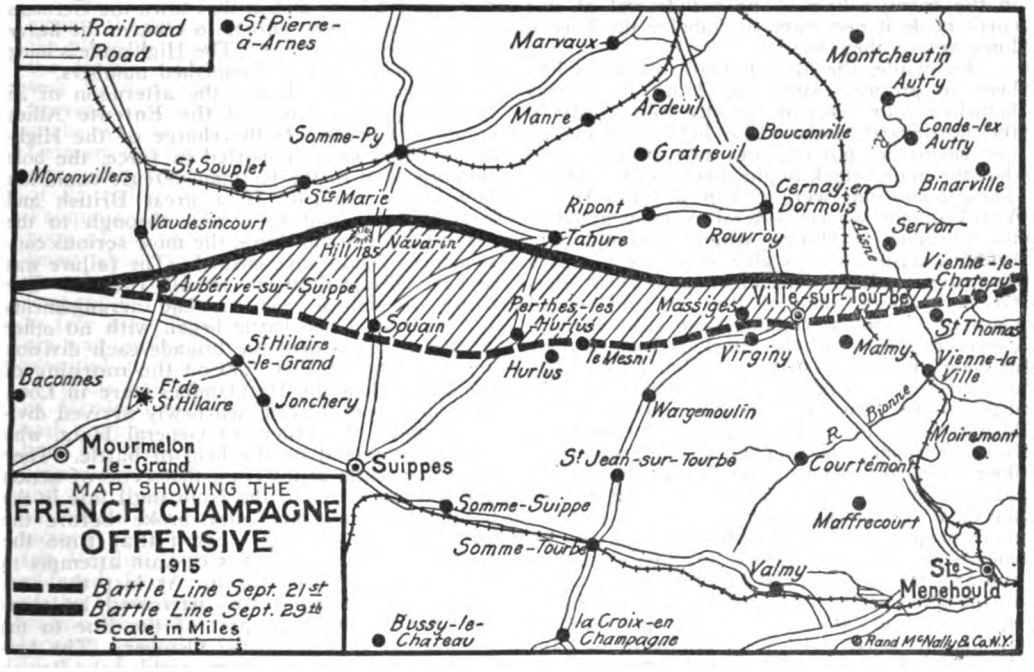
In this second battle of Champagne the French failed to do what they had set out to do, penetrate the German defenses, cut the

railroads, and force a retrograde movement in great force. It was under the direction of General Pétain, destined to come into greater prominence at Verdun. It was undertaken in the fullest confidence of success. For months the newly established munitions works had piled up reserve ammunition and it was used without stint or economy. The lesson of Neuve Chapelle, improved upon by the Germans at Dunajec, was still further developed by the French in this battle. The attack was staged on a front wide enough to permit fair operation through its broken section, and there was no trouble about the necessary reserves, thus removing the defects of Neuve Chapelle. But it did not result, as Dunajec resulted, in a great victory for those who projected it. The reason was simple. Dunajec was fought against an army that had not anticipated this kind of tactics. At Champagne the Germans had prepared for just such an attack. The long interval of quiet was improved by the erection of rear defenses. The lines were fortified with innumerable strong places which resolved themselves into forts as the intervening spaces were carried, thus giving time to check the attackers at the rear lines. Finally, the lateral railroad behind the line enabled the Germans to bring up reserves and stop the gap before the French charges had entirely overcome the resistance. It failed on the second day, when the decimated French armies found that these newly arrived forces would also have to be defeated and others behind them, before they could hope to stand free in the open country behind the enemy's entrenchments.

Nevertheless, the results of the battle of Champagne gave the French and British a great feeling of satisfaction. If it had not given them a complete decision, it had shown that their newly planned organization was successful. It had bitten deeply into the enemy's defenses. It was a kind of blow that he dared not have repeated frequently; for by it he, being on the defensive where losses ought to be relatively light, had indeed lost more than the French. It showed that the German supremacy in the art of war was broken. The months of work in munition factories and arsenals had borne satisfactory fruit. It only remained to continue what had been so well begun.

Let us now turn to the Lens sector, where the British attacked at Loos on a five-mile front, and the French, fighting at their side, attacked to the southward on a 10-mile front. The movement, as we have seen, was designed as a supporting operation for Pétain's battle in Champagne, and began on the same day, 23 September. General Foch was in superior command of both attacks, but General French as commander-in-chief of the British armies in France had the direction of the attack on Loos. Both armies were well supplied with ammunition, and the British had received many troops of the New Army of volunteers raised and trained since the war began, but not yet seasoned by actual battle experience. At that time the British forces in France numbered as many as 1,000,000 and were organized in two armies, the first, commanded by Sir Douglas Haig and the second by General Plumer. It was Haig's army that held the lines opposite Loos.

The French troops had for their main objective the Vimy Ridge, three miles south of Lens, overlooking a wide stretch of country to the eastward. If it were taken and held the Germans would be forced back for a con-



siderable portion of their lines. Foch's men battled hard for the position when the infantry was sent forward on the 25th on a six-mile front. The bombardment had destroyed the German trenches but machine gunners held out in the ruins and a heavy barrage and a massed counterattack were encountered. Nevertheless the French infantry worked away systematically day by day, and notwithstanding the heavy German reinforcements they carried their lines to the top of the Vimy Ridge on its western side. The enemy clung to the eastern edge and the narrow plateau on the top became No Man's Land. Here on the 28th the two armies faced one another ready for the final effort, which, it seems, would have freed the ridge from German control, when General Foch, at the request of General Joffre, sent his famous ninth corps to take over the trenches just north of Lens, where the British were in trouble through creating too narrow a salient in the enemy's lines. The withdrawal of this corps made it necessary to stabilize the French lines where they were.

Meanwhile, the British battle of Loos had been in progress since the 25th. As it was launched four separate attacks were made to the northward. designed to hold as many of the enemy as possible in these positions, so that the main attack might meet less resistance. These operations were as follows: (1) In the Ypres salient where General Allenby attacked the Germans at Hooge, winning ground in a brilliant dash only to give it up in the face of heavy artillery concentration; (2) at Bois Grenier, where some of the first and second German trenches were taken before the enemy's concentration forced the attackers back to their original position; (3) at Neuve Chapelle against the *Moulin du Piètre,* where the Indian troops with some British units fought a losing battle by rashly charging through the German trenches beyond the reach of aid from their supports; (4) at Givenchy, where a slight advance had to be given up before the end of the day. These engagements probably justified their purpose of holding the attention of the enemy while his lines were attacked elsewhere and are not to be judged by immediate results. In the third of them occurred an unusual battle incident. The authorities had adopted the plan of placing tried British battalions in the Indian brigades. Two of these brigades charging in the heavy mist found the trenches opposite them undefended and went on without stopping to "mop them up," with the result that Germans reoccupied them and attacked the advancing column from the rear. As the reserves did not come up the two brigades in the front suddenly shifted from victors into hard pressed and perilously situated men. They cut themselves out with great losses, especially the second and fourth Black Watch, serving with the Bareilly brigade of the Meerut division.

Meanwhile the operations known as the battle of Loos were under way on a line of four miles, between La Bassée and Lens. The country was flat and was littered with mining villages and slag heaps, out of which the Germans had constructed excellent defenses. The British artillery was very strong and made sad work with many of these positions. It could not however, destroy all the machine guns, which the Germans used in greater numbers in each succeeding battle, and there was work to do in all parts of the field. It was well done; for when the assault was delivered at 6:30 on the morning of the 25th the first and second German lines were taken along their whole front. Before Loos the attack was especially brilliant. The 15th division, all Scottish, composed of New Army men, here faced the enemy. Told to take Loos and Hill 70 the high slope beyond it, they streamed forward, subduing whatever resistance was offered until they advanced four miles from their starting point and passed beyond the last of the German defenses. One of their sergeants cried to his men, as they raced forward: "Hold your swearing, lads, and keep your breath. The next stop's Potsdam." At the end of the day the victors, exhausted by their efforts but determined, were fortifying their positions and preparing for the enemy's counterattack. Hill 70 commanded Lens and in that town the Germans were making hasty efforts to remove the heavy guns while it was time. The Highlanders hung on to the hill but in diminished numbers.

At this point, during the afternoon of 25 September the cause of the Entente Allies stood at a crisis. If the charge of the Highlanders had been supported in force, the hole they knocked in the German defense could not have been mended. If a great British and French army had been sent through to the rear of the German lines, the most serious consequences would have ensued. The failure was a keen disappointment to all Britons. The cause of failure was the bad arrangements for reserves. The battle began with no other British reserves than the brigade each division kept in support. At 9:30 on the morning of the 25th, when the Highlanders were in Loos, General French placed two newly arrived divisions, under the orders of General Haig, who was in command on the field of battle. They were then eight miles from the scene of action and did not arrive at the front until late in the night. Next morning they broke before the German counterthrusts. From that time the battle consisted of a series of vain attempts to hold what had been taken. At last the area of British operations was narrowed by turning over the southern part of the line to the French on 28 September–2 October. The battle, so nearly a great victory, yielded the British an advance of two miles on a four-mile front. The enemy's line was bent back but it was not seriously altered. The British lost 45,000 killed and wounded, a heavy toll, but probably equaled by the losses of the Germans. One of the results of the battle was the resignation of General French on 15 December and the promotion of General Haig to the chief command of the British forces in France.

Thus the threefold offensive—in Champagne, at Vimy and at Loos—came to its end without achieving its objective but with substantial advances toward it. Within the ensuing month came several reacting assaults by the Germans, but none of them made notable gains. The best of their armies were engaged on the eastern front, and the counterattacks were no more than local affars, undertaken to keep up the spirits of the soldiers. They fell away with the coming of winter and the two armies settled down to the weary fight

against cold and wet. The next action of note was the German attack at Verdun.

5. **The Battle of Verdun.**—The end of November 1915, saw the German army at the height of its success in the eastern area. Russia had been driven back to the eastern borders of Poland, Riga was all but taken, Serbia was overrun and rendered a conquered province, Bulgaria and Turkey were active and complaisant allies, Austria-Hungary was converted into a willing tool, and the dream of a "Berlin-to-Bagdad" line of communication seemed to be an actuality. To the German High Command it seemed only necessary to wage a defensive war in this region and turn with concentrated energy to the western area in order to make the cause of Germany triumphant over all opposition. The decision was quickly taken and preparations made with great care and energy. A great breaking-through movement against the French line of defense was proposed, to be followed by the same kind of turning strategy against the severed wings that had characterized the plans that went awry at the first battle of the Marne. The point selected for the blow was Verdun. Why was this place selected? Several reasons can be given: (1) The Verdun angle was a spear-head thrust far into the German defenses; for their lines on the east ran south from it to Saint Mihiel, a distance of 25 miles, and on the west sloped off to Vauquois, about the same distance, the rounded point of the angle between Étain and Maucourt being about five miles wide; (2) Verdun in French hands held the Briey coal fields under long range fire, and it was considered important to free these fields from that menace, since the ore was needed in the manufacture of munitions essential to the conduct of the war; (3) the Germans had ample railroad facilities in front of Verdun, enabling them to bring up troops and supplies as freely as were needed; (4) here the crown prince commanded, he had not been very successful in previous movements, and for dynastic reasons it was desirable that he should have the honor of winning a great victory; (5) Germans had a strong sentiment for Verdun, partly through feelings that had endured from the 16th century when as one of the three bishoprics it was the bone of contention between France and Germany and partly because several attempts to take it during the course of the war had been thwarted by the defenders.

Verdun was important to the French for three reasons: (1) Its successful defense so far had made holding it a point of honor; (2) as long as it was held it was an effective bar against German operations in the upper Marne Valley, that much contested avenue of approach to Paris; (3) it protected the Argonne, another important obstacle to German progress in this region. If Verdun were taken, therefore, it would be necessary for the French to make extensive readjustments in their lines of defense, and it might well happen that they could not make them safely in the face of such heavy pressure as Germany could now bring to bear.

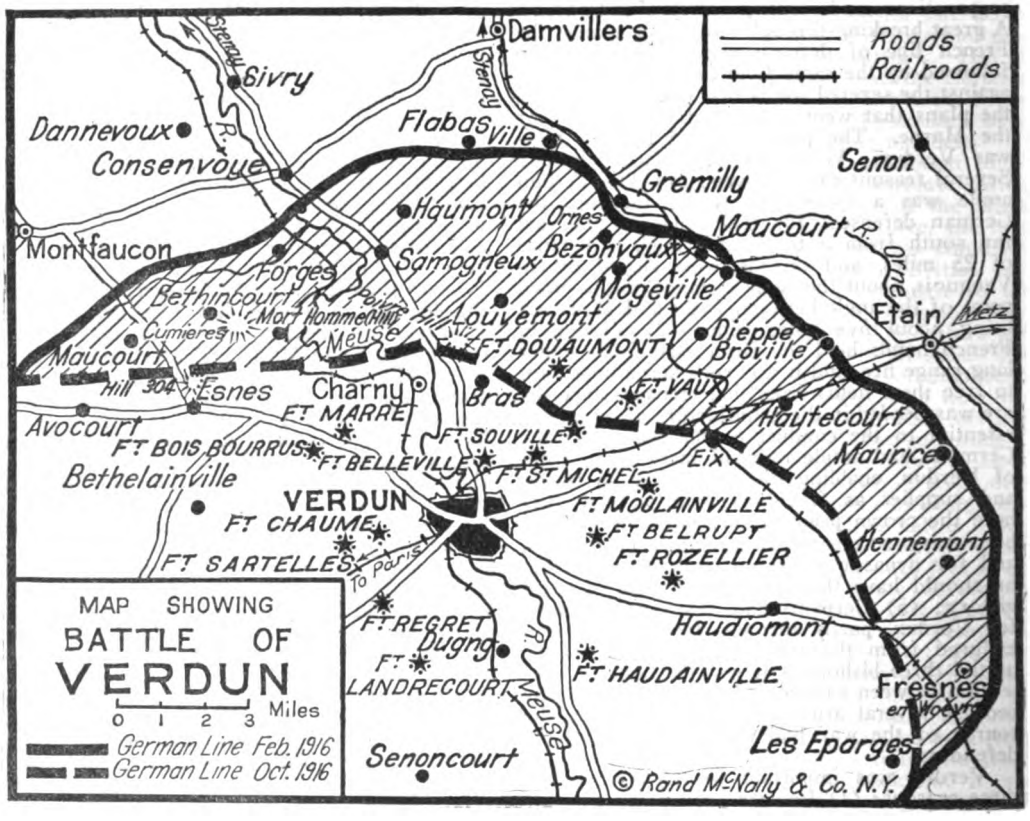
In the beginning of the war, Verdun, one of the main forts of the eastern defense, had been changed into a fortified area to comply with the progress of the science of siege operations. Its steel and concrete forts no longer constituted the chief features of the defense, but outlying trenches had been dug, and as the war progressed these trenches had been improved and supplied with dugouts and wire entanglements of the strongest kind. It was by this means that the place was able to meet the strong bombardment that was about to come upon it. Verdun, however, had one weakness, and it may well have been a reason why the Germans decided to make their grand attack at this place. One standard gauge railroad led into the place, from Sainte-Menehould, but it passed within five miles of the German guns at Vauquois and its use was subject to interruptions. There was a narrow-gauge railroad from Barle-Duc to Verdun, but to use it meant great delay in unloading and reloading at the junction point. The Germans believed it would be impossible for the defenders to obtain the munitions over these roads to withstand the attack they proposed to make. The French, however, had provided an excellent motor-transport service from the main railroads into Verdun, and it proved sufficient for their battle needs.

The German line in front of Verdun ran from Étain, east of the town and in the Plain of the Woevre, to Ornes, where it rose to the heights of the Meuse and crossed them to Brabant on the Meuse. Thence it crossed the river to Forges and Malancourt and reached the edge of the Argonne four miles west of Vauquois. South of Étain it continued across the Woevre Plain in a southerly direction, climbing the heights of the Meuse just east of Les Eparges and passing thence to the western environs of Saint Mihiel. The whole line, from Saint Mihiel to the Argonne, was 60 miles around the loop, whereas straight across country from end to end it would have been only 28. The section of the line selected for attack was on the north, along the heights on the east, or right, bank of the river from Ornes to Brabant in the first phase of the battle and across the hills on the west bank from Forges to Avocourt in the second phase. From Ornes to Brabant is eight miles and thence to Avocourt it is nine. The Heights of the Meuse are from five to eight miles wide in this region. In trying to advance along their crest from the north, the Germans showed that they preferred that way of approach to an attack against Étain and across the Woevre Plain, which would have brought them to the foot of the Heights at Eix, only five miles from Verdun. They perhaps chose wisely; for to have climbed the escarpment at Eix in the face of French defense would have been very difficult.

Their reliance was massed artillery with which they expected to repeat the experience of Dunajec. On the eight-mile stretch from Ornes to Brabant they concentrated an unheard of number of guns, from four-inch calibre to 13-inch howitzers. Airmen flying over the woods in which these guns were assembled reported that they lay like apples in a basket. The plan was to pulverize one section after another of the French lines so that the infantry could go forward without serious opposition. To support the artillery the Germans brought up new troops until there were 14 divisions, at least 230,000 rifles, in the sector from Ornes to Brabant, and there were ample numbers in the other sections.

The French are said to have anticipated the attack at Verdun. If the statement is true they

were gravely responsible for carelessness in failing to make better preparations. In the critical sector they had three divisions of Territorial troops, by this time inured to warfare and dependable for good results, but not equal to the best troops. It was for them to hold the lines until reinforcements arrived. General Herr was in command of the sector, which was in the eastern area under General Dubail until the middle of December, when it was transferred to the central area under Gen. De Langle de Cary. The northern defenses of the town were in a weak condition. Having given up the policy of manning the forts, the authorities had removed the guns from those positions for use elsewhere. The lines had been indicated and the strong positions had been occupied, but



the intervening trenches had not always been constructed and there was a lack of scientific engineering by which full advantage was taken of the natural features of defense. For an ordinary assault the preparations were adequate, but for the effort the Germans were about to make there were neither fortifications nor soldiers adequate to the defense. An investigation conducted by General Pétain pronounced General Herr guiltless of the sad state of defense of the position.

The storm broke on 21 Feb. 1916 during a heavy fog which favored the Germans. A deluge of fire accurately ranged by the map descended on the French positions. The first lines were held thinly, as was the French custom, and fell back as well as they could through the frightful barrage to the supporting lines. At noon the enemy advanced without opposition, took the first line unopposed, and most of the first line of support. In the afternoon the French won back the support lines in the Woods of Caure, but those in the Woods of Haumont were not recovered. Hurried efforts were made to construct strong rallying lines in the rear, and the troops were ordered to resist until the last in order to permit these lines to be finished.

Now followed a period of bitter fighting. It was for the French a matter of staying until the last possible moment and repeating the process in a position slightly in the rear. The bombardment was intense. Nothing like it had been seen in any other battle of the war. On 22 February Haumont was won by the Germans after a heroic defense. Its loss imperiled Brabant which was evacuated on the night of the 22d. Next day the attacks were renewed with unflagging violence. The heavy German guns could not be moved easily and their aim became less efficient as the target became more removed. The French artillerists handled their 75's brilliantly; the Territorials did all that was demanded of them; and as the enemy came on in massed formations a great toll of life was taken. On this day attacks were made on the French line in the Woevre, and it was decided to draw them back to the foot-hills of the Heights of the Meuse, so that Ornes was given up. At this time the French line had been driven back on an average of a mile and a half in three

1 Ruins of Zonnebeke Church after German offensive

2 The Ruins of Péronne

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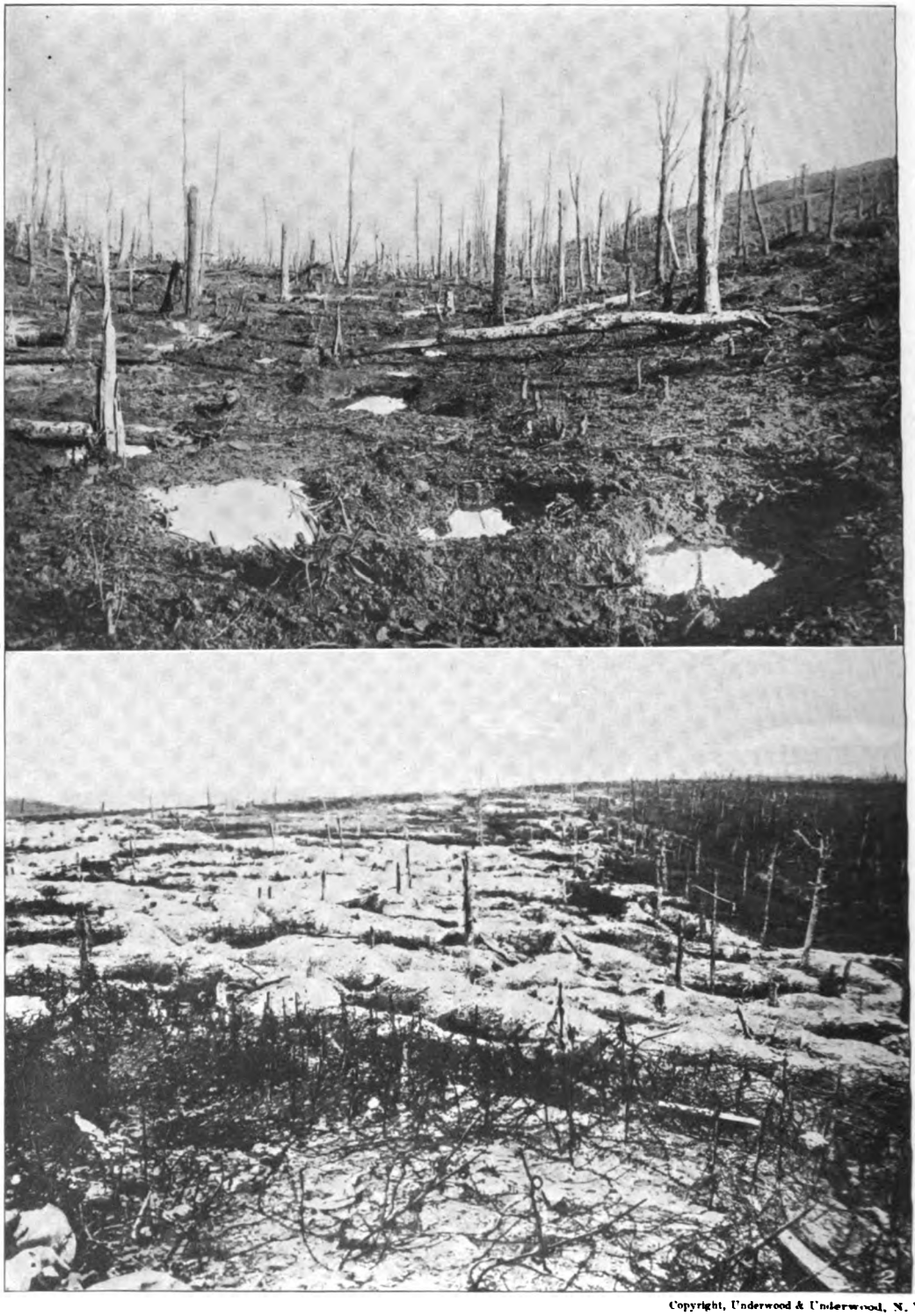

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1 Shell-holes in a wooded valley on the Meuse near Verdun

2 German trenches of the "Fille Morte"

days' fighting. In the centre it made a loop around Beaumont and there throughout most of the 24th the tide of death rose high. In the afternoon the Germans surrounded the place but the French managed to escape capture. On this day there was a general retirement.

February 25th was a decisive day in the battle. When General Joffre realized on the 24th how serious was the attack on Verdun he sent thither General Castelnau with authority to act as he saw fit. He had previously ordered up reinforcements, among them the famous 20th corps which had saved Nancy under Castelnau. Only two brigades had arrived by the morning of the 25th and the 20th corps was not on the field until afternoon of that day. The first act of Castelnau on arriving at Verdun was to direct General Pétain, commanding the second army, to come to Verdun with his staff. His immediate response and the vigor he infused into the operations perhaps saved Verdun for the French.

The retiring army reached the reserve positions during the night of the 24th. The trenches were well constructed and afforded comfort to men who had been fighting incessantly with little cover during four days. They began on the Meuse near Vacherauville, followed the crest of the Côte du Poivre (Pepper Hill), passing south of Louvemont and Chambrettes Farm, and turning southeastward until they reached the edge of the Heights at the gorge of Vaux. The tired French troops stood in them on the morning of the 25th awaiting the onslaught of the German, himself conscious that before him were exhausted troops in their last line of defense and that reinforcements were about to arrive. He massed his superior forces for a final crushing blow, believing that victory was in his grasp. The dogged defense made by the Territorials that day cannot be forgotten in French history.

When day broke it was snowing and bitterly cold, a bad thing for the attacking parties, since it made them more distinct against the horizon. But the Germans showed little caution that day. They had men in abundance and thought little of losses. A few miles to the north the kaiser and his staff stood on the twin peaks near Ornes watching the operations through glasses, and no one dared falter under such conditions. His troops attacked at each end of the new line, at the Côte du Poivre on the west and at Douaumont on the east. At Poivre the Germans came up time after time and were driven back continually by the 75's and the riflemen. The place was never in danger. At Douaumont the attacks were heavier and more stubborn; for the position was rightly believed to be the key of Verdun. Once fortified with German guns the French lines would be forced back from the surrounding hills. With reckless regard for their men the kaiser's officers sent up unit after unit against the well placed French lines. They seem to have thought that each blow that failed would weaken the defense to some extent, and that eventually it would be so weak that the attack would carry through. It would be difficult to describe the slaughter endured by the brave Germans that day as wave after wave was urged forward into the French barrage. The valley through which they approached was covered with the dead and wounded. At its exit the prostrate bodies lay in piles where the fugitives were caught trying to get away. But they ever came on. As evening fell they were rallied for a final attempt. The kaiser was waiting to announce victory, and already persons in the government confidence in Berlin were waiting at the telegraph wires for the word that would confirm the good news. This last charge was the most violent. The infantry of two corps was sent forward against the crest of Douaumont on a line two miles long. They fell in swaths at the crest as they tried to cross the narrow plateau in front of the French lines. Wave after wave had thus been mowed down and the mowers were tired and sickened with their work, when at the very close of the day came the 24th regiment of Brandenburgers, one of the crack units of the German army. In narrow formation it plowed its way through the defenses east of the town of Douaumont and broke through the lines at the site of the ruined fort, and here it stood during the night, behind it the lines forming anew. The kaiser seized the moment to announce to his people that Douaumont was taken.

Late in the afternoon General Pétain arrived at Verdun. A few hours later came the 20th corps. The new commander seized the situation promptly. The new troops were ordered to the front and the next morning they delivered a counterattack which drove all the Germans from the crest around Douaumont, except a few Brandenburgers who managed to hold out in the ruins of the fort. The 25th of February had proved a Black Friday for the Germans. At a tremendous loss they had won a precarious hold on the crest of a ridge, and at an early hour next morning they lost it.

Now followed three days of hard and desperate lunges at first one and then another place in the French defense. A great many lives were sacrificed uselessly in an attempt to cut through in the centre, between Poivre and Douaumont. Another effort was an attempt to make a great flanking movement by way of the Woevre Plain to the Heights south of the line of defense, but the two corps to which the task was assigned were crushed when they attempted to climb from the plain to the Heights. When Castelnau arrived in Verdun on the 24th the officers there were ready to give up the place. He declared that it must be held. Pétain took the same ground. It was then that the French soldiers, high and low, joined in the vow, "*Ils ne passeront pas*" ("They shall not pass"). All France poured its soul out in those words. To have given up Verdun after that would have been a moral defeat.

The first week of the fighting had shown the Germans that they could not break through the French lines by frontal attacks and they decided to shift their efforts to the western side of the Meuse. Now came a pause while the heavy artillery was being transferred. The first stage of the battle of Verdun was over, and it had yielded the Germans nothing but a serious loss of men. It is true their lines had been advanced four miles along the northern portion of the Heights of the Meuse, but against this gain place the fact that the element of surprise was expended and the French, thoroughly aroused, were present in force and bringing up men all the time. West of the river the French were placed on a ridge known as Côte de l'Oie (Goose Heights),

shaped something like a ham The small end is on the river opposite Brabant and is about a mile wide, while the large end is five miles due west and is two and a half miles wide. This ridge is bordered on the north and on the west by a brook with narrow meadows above which the ground rises to a height of from 150 to 225 feet, the highest point being at the western end, an elevation known as Mort Homme (Dead Man). Still farther west are two hills, known as Hills 304 and 287, whose slopes reach to the vicinity of Avocourt, eight miles west of the Meuse. In the beginning of the battle the French lines ran along the narrow part of the ridge for three miles at the foot of the northern slope and then crossed the brook and took in the villages of Béthincourt, Haucourt and Malancourt, and then it ran southwesterly until it took in Avocourt and proceeded thence to the Argonne. Since the Germans had carried their line forward on the east bank for four miles, this strong position on the west bank enfiladed their advance along the eastern bank and convinced them that nothing could be done until they had cleared the west bank. The key of this ridge was Mort Homme, its highest point. It stood at the centre of the position and if held and fortified by the Germans it would force the relinquishment of the positions on each side. If this hill could not be taken the next best tactics was to sweep around Hills 304 and 287 at Avocourt, turning the whole elevated area. Such was the work to which the German army gave itself as soon as it realized that the way along the Heights of the Meuse was blocked at Douaumont and Poivre. The fighting in this region falls into two phases, which we may recognize as the second and third stages of the battle of Verdun. The first concerned the capture of the Côte de l'Oie, the second was an attempt to turn the defenses by way of Avocourt. But we must remember that while these operations were in progress there were many supporting blows on the eastern side of the river, designed mainly to hold French troops in that section while superior forces attacked on the western side.

The second stage of the battle opened on 2 March, when the Germans began an active bombardment on the line from the Meuse to the Argonne. It steadily grew stronger until it was intense on the 5th. General Pétain interpreted it correctly as the precursor of a new movement and prepared accordingly. He was not deceived by a holding attack made on Douaumont, which resulted in the loss of the village of that name but did not shake the French hold on the ridge above it.

On 6 March the infantry battle on the west side began on the end of the line opposite Brabant. The Germans followed the plan used on the eastern side, subjecting a section of the line to severe artillery fire and then sending the infantry forward, a process that was successful against the weak line of Territorials at the beginning of the battle. It was the practice of the French in the World War to use their men with economy. When they stood in a position that was not essential to the main plan of the battle the policy was to make the enemy pay as dearly as possible for it but to give it up when holding became very costly. Such was the policy adopted at Verdun. There was a steady recession until the critical positions were reached at Douaumont, on the east side, and at Mort Homme on the west side and then the time had come to stand in one's tracks and die, if necessary. This policy was understood by the French soldiers. It was put into use on the west side of the Meuse in the battles that occurred in the second stage, from 6 March to 17 March. The net result was a gradual drawing back to the Mort Homme position, from the east end of the Côte de l'Oise until all the narrow portion, corresponding to the shank of the ham, was in German hands. But the French line would yield nothing around the eastern base of Mort Homme. Many of the enemy gave up life in trying to drive them from this position. On the 14th a main effort was made against Mort Homme. Forward went 25,000 men in five waves. In general they were checked, but a portion of them, Silesians, managed to lodge themselves just under the crest of a hillock, called 265, a spur of Mort Homme. They drove the defenders from the hillock, and news went to Berlin and the neutral world that Mort Homme was taken. It was false. Hillock 265 had the same relation to Mort Homme that the town of Douaumont had to the ridge of Douaumont, it was an outpost and useless unless the main position was carried. It was the German's nearest approach to Mort Homme for many days.

While these operations went on severe blows were delivered on the east side of the river, with the purpose of attaining Douaumont from the east. Here at the village of Vaux and the old fort of the same name the Germans fought desperately for three days to establish themselves, 9–11 March; but they were repulsed with great losses. Wherever the enemy appeared there Frenchmen appeared ready to oppose him. All France watched the struggle, as, indeed, all the world watched. The Germans sent up division after division, and Joffre did the same thing. It is said that every division in the French and German armies had gone through the Verdun trenches when the battle ended. When the second stage of the battle was at an end the crown prince was beaten, but he was unwilling to admit it. To withdraw now, he felt, would be a blow to his prestige. It was decided that he should have another try, and this time it was to be around the extreme western end of the French defensive position west of the river. Here we come to the third stage of the battle, the attack on Avocourt.

West of Mort Homme is Hill 304, which is higher than Mort Homme and commands it. It, in turn, is approached by Hill 287 on the west, and the western slopes of that are reached from the woods north of Avocourt. Through these various positions, therefore, woods, Hill 287, and Hill 304, the Germans proposed to take Mort Homme, which, in turn, would enable them to clear the west bank of the river, and which, finally, would make it possible to clear the east bank and outflank Douaumont on the west, and so enter Verdun. It was a long series and it had taken a month's hard fighting to develop the relations of one part to the other, but reflection seemed to confirm the German faith in the series. They felt that

they had at last worked it out to a logical statement—take Hill 304 and hard fighting will accomplish the rest.

On 17–20 March they delivered an intense bombardment on the trenches around Avocourt, and on 20 March began the long and desperate fighting that continued until 9 April. They first tried to advance by way of Avocourt Wood. By using flame throwers they gained a foothold in the woods and built a redoubt as a base for further advance. At the same time they drove forward in Avocourt Wood until Pétain decided to spend some of his valuable forces in a counterattack. It was worth what it cost; for it drove the invaders back from the position. At the same time he withdrew from the village of Malancourt but took such a strong position at the foot of Mort Homme that the position they won was worth nothing to the Germans. This happened late in March. After a breathing spell the Germans became active again on 3 April, fighting hard for the approaches to Mort Homme on the north. By 8 April they had driven up to the foot of the hill on the northern end and to the foot of Hill 304 on the northwestern side. They then massed five divisions and made a final attack on the 9th, comparable in intensity to the great attack on Douaumont on 26 February. Here, as then, they had driven forward by piecemeal attacks until they stood within touching distance, as it were, of their main objective. Here, as then, they gathered their utmost strength and made a final assault along their whole line. The 9th was a day of great effort and a day of great slaughter for the Germans. They came on in close formation, only to be destroyed by the French artillery. Driven back they rallied and came forward again, and again they were forced back by the shower of death that fell from the hills. At nightfall their grand offensive was a gigantic failure.

For a time it now seemed as if the German High Command was willing to acknowledge defeat, since the battle front was comparatively quiet for nearly four weeks. The renewal of the conflict was probably due to political pressure in Germany, where so much had been said about the great victory that was to crown the sacrifices that the ruling class did not dare confess defeat. The part of the struggle that came after this lull has been called the second battle of Verdun, but it was, properly, only a deferred part of the first battle. It was taken up and carried on in dogged determination but without a clear feeling that victory would be worth its cost. In this part of the battle three stages are also observed, one on the west and two on the east side of the Meuse.

Before they began a change had occurred in the French command. General Pétain had succeeded De Langle de Cary in command of the middle portion of the great battle line, stretching from Soissons to Verdun, and General Nivelle, under his supervision, was in command of the second army defending Verdun. The change in command did not mean a change in tactics.

The fourth stage of the battle, the first after the lull in April, was an attempt to sweep back the defenses on the west bank of the river. It began with a severe bombardment on 3 May against Hill 304. During four days artillery and infantry made alternate attacks on this hill without success. At last it was assaulted with the equivalent of an army corps against two regiments defending it. Five times they rushed forward and were repulsed, the last time in a fierce counterattack that was delivered in the darkness. Next day, the 8th, the top of Hill 304 was so violently swept by hostile fire that the French drew their lines down to its base, yielding the position for which they had taken heavy toll. From 17–21 May Mort Homme was carried in the same kind of a concentration. Then came a period of great rushes and counter-rushes to carry the lines farther along the river bank. They yielded the Germans nothing and cost them tremendously. At the end of the month the line of battle on the west side was about a mile south of the crests of Hill 304 and Mort Homme and ran straight east and west, to the river on one hand and to Avocourt and the Argonne on the other. Now the battle died down in this part of the field.

The next and fifth stage of the battle of Verdun belongs to the story of the eastern side of the river and here the offensive was taken by the French. The object was to press back the enemy at Douaumont and to draw off some of the troops being used on the other side of the river. After a two days' bombardment the infantry went forward on 22 May and took most of the ruins of Fort Douaumont out of the hands of the Germans. Only the northeast corner held out, defended by machine guns in great numbers. Here the French held on despite the maddening crash of shells over their heads until the 24th, when two fresh Bavarian divisions recovered what three French regiments had won. Thus ended the French offensive without profit. The sixth stage of the battle was a series of operations around the right end of the line that ran across the Heights of the Meuse. In this position they had gradually worked forward until they were within five miles of Verdun at some points. At Douaumont they had high ground from which they could observe all the ground to the city. They had found it impossible to go forward in a straight line from that elevation, and they decided to make the attempt by their left flank. Blocking their way on the left stood Fort Vaux, held by determined French soldiers. Its guns covered a wide area right and left and protected the strong Fort Souville, which was the last strong protective work of Verdun.

On 31 May, a heavy bombardment was begun, and the next day an infantry attack was made. There were some gains west of Fort Vaux and others to the east, and the next step was to make a converging assault on the fort from three sides. Some idea of the intensity of the fighting in this section may be obtained from the fact that for three months an average of 8,000 shells a day had fallen on this fort. On 2–3 June the infantry were again employed, and again Bavarians were used in wave after wave. They were received by the garrison in cellars and among the ruins of the concrete construction, with Major Raynal in command. The name of this heroic man deserves special mention in a series of operations in which heroic deeds were common. Under his indomitable will the garrison held

out until 6 June and did not surrender until it was reduced to a mere handful. On 7 June came a massed attack on a long stretch of trenches. The result was an advance as far as Fleury. Here was the farthest advance of the Germans in the battle, although there was heavy fighting until the end of June. Indeed the battle flared up occasionally until August. But it is better to say that it did not continue in its proper form beyond 30 June, which was the 130th day of its continuation. At its close the Germans were three and three-quarters miles from Verdun at the nearest point.

The battle of Verdun, as an incident in the military history of the war, is a long fog of slaughter in which only the larger divisions of operations stand out, as the six stages into which it here has been divided for the convenience of the reader. It was a series of bombardments any one of which may safely be pronounced the severest of the war up to the time when it occurred. To carry a position of a few yards after such artillery preparation frequently demanded charge after charge, but the Germans were willing to pay that price for a slight gain. In 130 days they went forward on an average of four miles along their entire front. But this does not express the actual rate of advance in the later part of the struggle. From 9 April to 30 June the progress on the east bank was one mile while it was a mile and a half on the west bank. At this rate the city of Verdun might have been taken in another three months, but at such cost as would have revolted the world. To hold it had long been no more than a matter of honor with the French, and so deeply had they bitten into the German resources of men and material that this sense of honor was well satisfied many weeks before 30 June. It would be no discredit to give up a place which had been so well defended whenever the High Command saw fit to take the step.

The Germans came to the battle of Verdun fresh from victories over Russia and Serbia, convinced that by massing artillery and men they could break down all resistance, as in the East. They miscalculated in failing to appreciate the endurance of French soldiers under artillery fire. "Passeront pas" sang the *poilu* and he made the sentiment good with his life. It was he more than any general that won the battle for France. No figures have been given to show how heavily he lost. It is certain that he took heavier toll than he gave, and the estimate he made of the loss of the enemy at 300,000 seems no exaggeration for the whole battle. It is likely that the French losses were not more than two-thirds as heavy.

There is an addendum to the battle of Verdun, that may as well be mentioned here. The battle of the Somme, which began on 1 July, drew away the German forces in increasing numbers, and finally the Verdun front was left in a comparatively weak condition. General Nivelle took advantage of the opportunity and made a sudden attack on 24 October. A short bombardment leveled the German trenches and the infantry went forward two miles on a front of four and a half miles on the eastern side of the Meuse. Douaumont and several positions on its west were thus recovered. Artillery was then concentrated against Fort Vaux and made the place so hot that the enemy left it on 2 November. It was now only necessary to move the guns forward and repeat the tactics of 24 October. Thus a second bite was taken in enemy territory on 15 December when the Germans were thrown back for two miles between the Woevre Plain and the Meuse. They were thus in the positions from which they had begun their attack along the Heights of the Meuse on 21 February. All their gains on the east bank were nullified, and the world was given additional evidence of the defeat they had suffered in the great battle. By this time the Germans themselves had come to realize it, as was shown by the removal on 29 August from the position of chief of staff of General von Falkenhayn, who was chiefly responsible for the battle.

MINOR OPERATIONS.

1. Supplementary Engagements Early in 1916.— During the first half of 1916 the battle of Verdun overshadowed the fighting in all other parts of the Western area. Into this struggle were drawn the best of the French forces; for it was here that the fate of France seemed at stake. It was the evident purpose of the German High Command to deal France a death-blow and that done to turn at leisure against the British in the northern section of the line. To use a term common in German newspapers, France was to be "bled white." The result showed how wisely the French High Command husbanded French resources, doing the greatest amount of damage with the smallest amount of loss. The end of the struggle saw the French badly shaken, no doubt, but still strong and only awaiting a period of recuperation to go on with the struggle.

In making their plans the Germans counted on a state of unreadiness in the British army. It is true that the number of Britons in arms was 5,000,000, and it is true that munitioning had progressed to a remarkable degree; but the New Army lacked something in training for the vast task of the war. As a machine it needed "tuning up" and concentration at some point at which the weight of men and material could be made to count. Everywhere there was an expectation that it would soon take the offensive on a grand scale, but it could not be ready until the summer. Perhaps, if the Germans had not forced the fighting at Verdun the grand offensive would have been delayed until the autumn, when there would have been a mighty cooperating attack by the armies of the two nations. By striking one of them early in the year the Germans wisely anticipated such a double attack.

The inactivity of the British during the battle of Verdun led to some criticisms. German influences in neutral countries indulged in sneering remarks about the willingness of the British to let France sacrifice herself, evidently hoping to create dissension between the Allies. Probably some echoes of this attitude appeared in the French press; but the responsible organs of opinion in France understood the situation too well to be caught by such a bait. In one respect the British gave material help to their Allies: Early in the year they took over the Arras sector previously held by the 10th French Army under General d'Urbal, so that their lines extended from the Somme River to Pilkem at the northern limit of the Ypres salient, a

distance of 80 miles. Beyond them was a short sector in the hands of the French and beyond that the Belgians held the line to the sea. The extension of the British lines to the Somme, besides releasing the 10th French army for service elsewhere, gave the British some solid ground for their future operations and thus made their work much easier, when it began, than it had been in the flat and soggy area around Ypres.

In fact, during this interval the British were making steady preparations for a great attack in the region just north of the Somme. Weeks were spent in collecting guns and ammunition in that section and in organizing the intricate system of transportation behind the lines that was necessary to enable the army to move properly in a large-scale modern battle. The Germans seem to have known that some such an attack was imminent, for they did not weaken their lines before the British troops but delivered several sharp holding blows in that quarter. One of their plans was to organize a strong mobile artillery force which traveled up and down the sector, shelling trenches at various places and opening the way for sharp infantry attacks. The British troops called this artillery force "the flying circus." These isolated attacks did not alter materially the relative positions of the two sides in the north, although the net result was probably with the Germans. But they afforded the newly-organized British army some valuable training, for they were on a larger scale than the trench raids which had by this time become of almost nightly occurrence. Most of them were delivered in the Ypres sector, where sharp local actions occurred from February to May, one side attacking and receiving a counterattack, only to be succeeded by the reverse process a little later. The net result of these affairs was practically nil. It was an unpleasant business, as the surface of the earth was a broad mud-sluice interrupted by numerous shell-holes, into which the soldier who slipped was liable to drown. It is told of one column that was sent forward to cover a distance of 200 yards that it took hours to cover it with no other obstacle in their way than the mud. The sufferings of the men were great, and especially those of the British, whose positions were generally on the plain, while their adversaries were on the hills and had the range of their trenches and lines of supply. As the time approached when the British could be expected to be ready for their great offensive, the Germans made a series of sharper thrusts in the Ypres salient. Some writers have spoken of them as the third battle of Ypres. The term is not applicable to operations that call to mind the first and second great effort at this place, where the design was to break through to the Channel ports. In this case the object was merely to retain the British forces in this section and prevent concentration on the Somme.

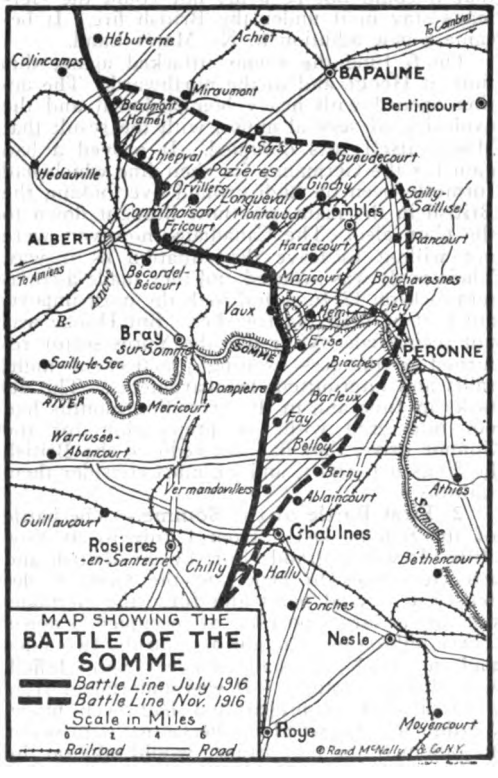
The first of the series occurred on 2 June between the village of Hooge and Hill 60, where Canadians held the British trenches. An intense bombardment of four hours was followed by a massed infantry attack by nine or 10 battalions. The attackers came forward confidently, thinking that the guns had left them nothing to do. But the crumbling trenches sheltered a few who had strength and reason enough left to rise and fight desperately, some of them with undamaged rifles, some with the butts of broken weapons or with entrenching tools, and some with naked fists. The fierce battle lasted well into the night, the Princess Patricia's Canadian Light Infantry and the Canadian Mounted Rifles bearing the brunt of it. At nightfall the Canadians fell back to reorganize, yielding their enemies a gain of 700 yards. Next day came a counterattack through which most of the lost ground was recovered, but so destructive a rain of shells fell upon it that it could not be held; nor could the Germans stay in it under the British fire. It became a new addition to No Man's Land.

On 6 June the enemy attacked again, this time at Hooge and to the northward. The action opened with heavy bombardment and the explosion of several mines, with the result that Hooge itself was occupied. It proved a bad gain for the Germans; for their line which had formerly been on high ground overlooking the British in the plain, was now brought down to the plain also. The Canadians, however, were not willing to leave the situation as it was. Their pride was aroused and they made a counterattack on 13 June and took the most important part of their old trenches. But Hooge was not recovered. After this the Ypres sector returned to the less exciting practices of night raids and intermittent bombardments. The attacks in June and in the preceding months had not interfered with the preparation for the Somme drive, they had not reduced the British holdings materially, and we must consider them failures.

2. First Battle of the Somme.— The battle of the Somme lasted from 1 July to 30 Nov. 1916. It was a grand effort by the British and French armies to penetrate the German defenses at a vital point and force the Germans out of a large portion of occupied France. Three million men fought here on the two sides and a third of that number were killed, wounded or captured. It was undertaken after a great deal of preparation had been made. Verdun was launched by the Germans in order to anticipate the part France would take on the Somme. The losses of France at that point lessened somewhat her striking force in the North, but not more than the German striking force was lessened. Was the battle of the Somme fought too soon? Undoubtedly it would have been better to have waited a few weeks longer, as first intended, but there is little to suggest that the ultimate result would have been satisfactory to the Entente Allies if they had waited. The battle was undertaken as a decisive thrust against the Germans in the West, to begin their defeat, if not to encompass it actually. Joffre and Haig worked together in good hope, striving to make the best possible preparations, and although the terrific grind of death was going on at Verdun the preparations for the great battle were not interrupted. Time and again Haig offered to break them off and send help to Verdun. Joffre's reply was ever that the French could take care of Verdun and that the British should go on with their preparations for the great battle. At last, however, the June fighting showed that French endurance was wearing thin on the Douaumont plateau. Then Joffre consented that Haig should play his part, and the great battle was opened

on 1 July in order to take pressure off Verdun. It probably saved the fortress from capture.

The place selected for the attack was 35 miles north of the great angle in the battle line near Noyon, on the Oise. If the British could break through here and the French a little southward and sweep along in a straight line to the east they would get behind a large section of the German line and force it to fall back. If they could go through with dash and reach Saint Quentin, 40 miles in the rear, they would



cut vital railroad lines and make it impossible for the Germans in the sector just east of Noyon to get out safely with their heavy guns and other materials. The blow was to be given by two great armies, British and French, one on the north and one on the south side of the Somme River. The British line of advance was a sector from Gommecourt to Maricourt, on the north bank of the Somme, a distance of 18 miles. The French sector of advance extended from Maricourt across the Somme to Fay, eight miles southward. The country was dry rolling ground, a comfort to the British, who were weary of fighting in the water-logged fields around Ypres.

The direction of the 18-mile sector of the British advance line was generally southeast, but at Fricourt it turned due east for four miles and then resumed its southeasterly course. This jog in the line was the place at which the British were to win their most notable success in the battle. Another thing to be remembered is that the national highway from Amiens to Cambrai, and thence on to Valenciennes, Mons, Namur, Liége and Cologne cut this sector at its middle point. It passed through Albert, two miles west of the line, and Bapaume, nine miles northeast. This highway, an old Roman road, was the axis of the British battle as planned; but by the failure of the attack of the northern wing it became the northwestern limit of the area of actual progress. The British went about their preparations for battle with that careless indifference for their foes that cost them so dearly in the first two years of the war. They made slight efforts to conceal their activities, as though they thought concealment unnecessary. Thus warned, the Germans made unusual defensive preparations. The chalky soil lent itself to entrenchments, and they spent days and nights in making dugouts strong enough to resist bombardment. Behind their first line they constructed a second line, and behind that a third was begun. When the attack was delivered this particular sector was the best defended in the entire German line.

For the attack the British had an army under Gen. Sir Henry Rawlinson containing 20 divisions, in all about 250,000 infantry, besides artillery, engineers and other troops. The French had two armies to the south of the British, one commanded by General Fayolle and another by General Micheler. The first took an active part in the initial stages of the battle and had an infantry strength of a little more than 50,000 men, while the second did not come into the struggle until it had passed into its later stages. Under Fayolle, who was an excellent commander, were the famous 20th corps — the Iron Corps — which saved the day at Nancy in September 1914, and turned the tide at Verdun on the fateful 26 Feb. 1916, and an equally famous unit, the Colonial Corps. They were considered the flower of the French shock troops. In artillery the French were well supplied, and they had been using it long enough to know how to get the best results out of it. The British had a larger supply than ever before, but not as much as the situation required. Nor had they yet learned how to use it with the most precise results. Their troops, newly organized and well trained in the camps of instruction, lacked actual experience in large-scale fighting. They were especially weak in co-ordination of infantry and artillery service, showing themselves so eager to go ahead in the battle of the Somme that they often ran into their own barrages. In the latter part of the battle the supply of artillery was larger, which illustrates the disadvantage the British were under in having to begin the fighting before all their preparations were made.

The Germans on the opposite side were parts of two field armies, one commanded by Rupprecht, crown prince of Bavaria, and the other by Gen. Otto von Below — not to be confused with the von Bülow who fought at Kluck's left in the battle of the Marne. For purposes of strategy, however, von Below was under the direction of Rupprecht, as Fayolle and Micheler were under the direction of Foch, who commanded the northern great section of the French line. The Germans had about 20 divisions in the sector attacked, but they were continually shifted during the battle. It was said that each side put in more than 100 divisions while the engagement lasted.

General Haig opened the battle on 1 July "after the fiercest artillery bombardment of the

war.[3] Remembering that the failure at Neuve Chapelle was because the breach in the enemy line was too narrow and at Loos because the supports were not sent forward quickly enough, he now attacked on an 18-mile front and assembled a great mass of troops to follow up the success of the first moment. He expected the artillery to level the opposing trenches, as on former occasions. The Germans, however, had constructed their dugouts so deep that they were safe from a fire that leveled the trenches on the surface, and when the barrage lifted the defenders came to the surface with their machine guns, which were in great numbers, and opposed unbroken lines to the attacking parties all the way from Gommecourt to Fricourt.

The British advanced with their traditional courage, singing and jesting in the assurance that they were going to occupy abandoned trenches. They were met with a withering fire but did not falter, rushing forward to the work of the moment in succeeding waves. Then the German guns opened on the areas behind them, cutting off the supports and making it as unsafe to retreat as to go forward or to remain stationary. The hours of the slaughter of brave men that now followed can best be understood by saying that at the end of the day the British losses amounted to 50,000, or more, and that the German lines on the section indicated stood intact. Southeast of Fricourt, however, there was better success. The German trenches were penetrated for a mile on a seven-mile front and 3,500 prisoners were taken, with a number of machine guns and other materials. It was a bad return for the effort made, and the cost was so heavy that for weeks the authorities did not dare let all the facts be known at home.

The French also attacked on 1 July from Maricourt to Fay. The Germans had taken no extraordinary precautions against them, thinking the Verdun fighting had left them too much exhausted to be feared. The attack, therefore, delivered with the best French troops and supported by artillery that had learned its lessons well at Verdun, was unexpectedly successful. It went forward nearly two miles on the entire front, and yielded 6,000 prisoners. Although the net result of the day's fighting was small, General Haig did not falter in his purpose. Setting his teeth with British determination he began to hammer away at the part of the line which had yielded to his initial blow, and for five months ate his way into it. He did not break through, as the British public expected in the beginning, but he forced the Germans to readjust their lines to the northward and eventually to move back on all that front on which they had stood so steadily during the first shock of the battle. To the Germans the initial attack was a victory. They concluded that the British effort was measured by the results of the first day's fighting and argued that the onslaught at Verdun, apparently so near to victory, could go on. They were soon undeceived. The continued assaults of the British were adapted to the experience gained on 1 July. There was to be no more assaulting a long line but the artillery fire was to be concentrated on small sections, as the Germans were doing at Verdun. The area of activity was small, about 50 square miles, but nearly 1,000,000 men fell in that area, and after the bitter experience of 1 July the British losses were not excessive.

To understand the main features of this stage of the fighting it is necessary to consult the map. Haig's chief objective was Bapaume, important because several roads centred at it and because once attained the British would be beyond the previously constructed German lines and in a position to force a further retirement on each flank. To reach Bapaume from the British front, a distance of eight miles at any point in the arc from Gommecourt to Maricourt, it was necessary to penetrate five lines of defense. The British and French trenches extended across the base of the angle made by the Somme and the Ancre rivers, the surface of which is generally flat and low. Back of the first German trench the ground rose 150 feet to a ridge that interposed its barrier across the lines of access to Bapaume all the way from the Ancre to the north and south road that connects Bapaume with Péronne. On the southern and western edge of this ridge — which was from two to three miles wide — was the second German line of defense. North of it three lines interposed before Bapaume, all constructed after the attack of 1 July. They were strong obstacles to the British advance.

In his report of the battle General Haig divided the British operations into four stages: (1) The fighting from 1 July to 14 July, which took the first German line and the intervening country up to the ridge; (2) the fighting from 14 July to 14 September, during which the British pressed onward, step by step, taking one hill and fortified village or farm after another, until they finally had firm grasp on the whole crest of the ridge; (3) from 14 September to 23 October, during which they drove the Germans slowly down the slopes that lay beyond the ridge; (4) from 9 November to 15 November, during which, after a short interval of quiet on account of bad weather, the fighting shifted to the region of the Ancre Valley and an attempt was made to carry the new line northward up to the Ancre and the old line eastward, so as to cut off a slice of German holdings immediately west of Bapaume. In all these operations the British fought in the Verdun way, with heavy concentrations of artillery of all calibres that pulverized the enemy's defenses and left the infantry little to do but clean up the remnants of the garrisons that had held the demolished positions. During all this period the French on the south fought brilliantly, carrying their lines forward more rapidly than the British and taking large numbers of prisoners. At the end of the season they were within a mile of Péronne, south of the Somme, and had well passed the road from Bapaume to Péronne north of that river. To describe these stages of conflict in detail would involve the repetition of a series of small engagements each of which demanded heroic conduct. The operations of the first stage were chiefly clearing actions. Fricourt and Contalmaison, two strongly fortified villages, had to be taken and a number of wooded slopes had to be cleared of machine guns ere the army stood before the second German line. The area to be cleared was two miles by eight, and some idea of the nature of the fighting may be had when it is said that it required hard fighting by 250,000 men for 12

days to complete the work. But it was well done by the 13th, and the army proceeded at dawn on the 14th to attack the second line of defenses, the battle thus passing into the second stage. The line of advance was from La Boiselle to Delville Woods, just east of Longueval, a distance of six miles. Both positions were taken by hard work, and in the second the British encountered that kind of forest fighting that made the conquest of the Argonne such a difficult task for the American soldiers two years later. To drive out the defenders was hard enough and it was done more than once, but the place was well covered by German artillery and it was impossible to hold it until the surrounding areas were taken also. For 13 days the two sides contended for Delville Woods, until the British soldier gave them the name «Devil's Woods»; but they remained at last in British hands.

Of the villages attacked one of the most difficult to take was Pozières, which stood on the Albert-Bapaume road at the southern edge of the ridge. Strong forces were thrown against it on 23 July, it being a part of an attack on the whole advanced line. The ruins of the town were fortified with covered trenches and strewn with machine guns. In the early morning two divisions converged on it, one from the southwest, a Midland territorial division, and another from the southeast, an Australian division. The Midland men advanced with little opposition to the edge of the ruins, but the Australians met fierce attacks from a sunken road that ran parallel to their own course. They cleared away the opposition and reached the town where they fought hand to hand from one ruined house to another until they fairly divided the town with their opponents. The struggle went on for three days and on the fourth most of the place was won. It now remained to force back the foe from the environs, a process that had to be fought for step by step under heavy cannonading. Behind the town three-quarters of a mile was a windmill, on high ground that overlooked the entire ridge and the slope that ran away to Bapaume. In a cloud of exploding shells the Australians held on four days always groping their way toward the coveted ruins of the windmill. Early in the morning of the 30th they went forward in the darkness, grappled with the defenders, and established their trenches at the edge of the labyrinth that protected the windmill. Here they lay for five days in thick and stifling heat that tried even the men from the antipodes. But on 4 August, in the coolness of the night, they rushed the positions at the windmill and in the parts of the town that had not been taken, advancing from 400 to 600 yards on a front of 3,000 yards. They fortified their gains and held them against the enemy's counterattacks. Then the process of slowly crawling forward was taken up again, this time the direction being toward the northwest, where the strong position known as Moquet Farm with the village of Thiepval blocked their way. On the right, south of the angle at Longueval, the village of Guillemont still held out. It was the only part of the German first line of defense that had not been taken. It fell 3 September to troops from southern and western Ireland.

The third stage of the battle, 14 September to 23 October, saw the British extend their lines down the northern and eastern slopes of the ridge. The defenses here had been completed since 1 July and were very strong. They stood just beyond the edge of the crest of the ridge. The British, therefore, were now going down the slope as they advanced, which made their task somewhat easier. At the same time they reached out on the west and took Thiepval and Moquet Farm, a vital part of the line they had not been able to carry in the attack on 1 July. They carried their lines within three miles of Bapaume on the south and stretched out in a broad bulge to the eastward. It seemed that only a vigorous push was needed to carry them to Bapaume itself.

Before this could be made General Haig thought it necessary to widen his salient on the west, and in doing that he carried the battle into its fourth stage The weather had already shown signs of approaching winter and a fortnight of rain and mud had convinced the Germans that vigorous operations were impossible. They were thus thrown off their guard, when the British, taking advantage of a clearing spell, made a sudden and powerful attack on 13 November on Beaumont Hamel, where the battle line crossed the Ancre, the scene of a bloody repulse on 1 July. The British had learned much since that repulse, one of the most important acquisitions being the proper method of co-ordinating a creeping barrage and an infantry attack. A division of Highland Territorials went against this place, strongly fortified by trenches with an extensive system of subterraneous chambers filled with troops. They advanced in a deep fog at the crack of dawn and were in the German trenches before their attack was suspected. Then followed several hours of fierce hand-to-hand fighting in which the Highlanders closed one entrance after another until the underground defenders were trapped and surrendered. Other parts of the attacking line carried forward their positions. The fighting was renewed next day and Beaucourt was taken by the naval division, which had already distinguished itself at Antwerp and Gallipoli. It was not until the 18th, when icy rains had again set in, that the battle was given over. At that time three square miles of most difficult territory had been taken with 7,000 prisoners and much valuable material, and at a cost in killed and wounded that was comparatively small. But the battle of the Somme ceased with this engagement in obedience to the command of «King Mud.»

In following the battle through its four stages no mention has thus far been made of the brilliant operations of the French south of the British area. Striking out on 1 July they made at once large gains on both sides of the Somme and repeated the action as often as gains seemed necessary to round out the advance in the northern part of the sector engaged. When the battle ended they had advanced from Maricourt to Rancourt and Bouchavesnes on the road from Bapaume to Péronne and were within a mile of Mont Saint Quentin, which commanded Péronne on the north. South of the river they had reached La Maisonette, a mile and a half from the same town and stood within two or three miles of the Somme for several miles below the town. To go further was only to spend strength for a river which could not be crossed until

Péronne was taken and which would be reached without a struggle if that town succumbed. Further operations, therefore, on the south of the river but waited on the situation north of it. The more rapid success of the French as compared with the gains of the British was due partly to the greater difficulty of the country before the British lines, partly to the better state of preparation of the enemy in that region, and partly to the fact that the French had a better trained army. The British forces in the beginning of the battle lacked battle experience. Every day it progressed brought them improvement in this respect. Fighting day by day the same kind of battles the veterans of Champagne and Verdun were fighting in plain view of them, they could but contrast their methods of warfare with the methods of their Allies. This period of four months' hard battling gave the finishing touches to their military education.

It was in this respect that the battle of the Somme, extending from 1 July to 18 November, had its chief significance and not in the fact that it netted the Allies a gain of 200 square miles of French territory and the capture of 80,000 German prisoners. Germany had begun the war with one trained army against her in the West, she had allowed it to go on until two such armies sood before her on that front. At the same time she had suffered heavy losses. In the battle of the Somme her casualties were perhaps 500,000 against 750,000 for her antagonists. The unbalanced ratio of losses was particularly noticeable in the first weeks of the battle. As the British soldiers learned the tricks of modern fighting they learned the art of taking care of themselves in perilous situations. In the later stages of the battle the losses were better balanced.

The battle of the Somme has an added interest because it was here tanks were first used against the enemy. This new battle machine was developed by British army experts out of the Holt farm tractor, of Peoria, Ill. It was an armored car whose locomotion was arranged on the caterpillar principle, which enabled it to cross the roughest ground and demolish the ordinary obstacles of a battlefield. The machines were manufactured in England with great secrecy, and when they appeared in action in the attack on Courcelette on 15 September the British soldiers were as much atonished as the Germans. Twenty-four of them were sent forward ahead of the troops, and 17 survived the battle. They struck terror to the hearts of the enemy, who thought that only Germany could invent new machines of war. They were designed as instruments of offense, and although they were useful in that capacity, their greatest service was in demolishing wire entanglements and opening the way for the advance of the infantry. Before the tank appeared the wire was left to the action of high explosive bombardments, which were not effective in less than several hours. By devising a light and speedy tank the Entente Allies were able to send it forward with a barrage, clean up the wire in an hour, while the long range guns isolated the opponent's front lines and placed them at the mercy of an infantry charge. In this kind of service the tank found its greatest value. It restored the element of surprise to battle tactics.

3. German Retreat in 1917.— The year 1917 was a period of hard fighting on the western front. Hardly a sector from Verdun to the North Sea but saw severe battle. During 1916 the French had played a waiting game, leaving time for the British army to reach the state of veteran effectiveness. Their one great struggle, at Verdun, was a defensive battle. The one great attempt of the British, the battle of the Somme, was in reality a massive bit of advanced training. In 1917 both armies were at the highest state of efficiency. They kept the enemy on the defensive throughout the year, delivering many small blows and several mighty ones. The reader who is impatient with mere detail may wish to hurry on to the decisive year of 1918, when the great tragedy produced a vast sweeping movement which led to the dramatic close of 11 November. But we must remember that 1917 has its place in the general story. Here was put into full operation that process of attrition that lowered the fighting strength and morale of the Teutons, gave confidence to their opponents, and made possible the victory of 1918.

For Germany 1916 was a bad year. Having brought Russia to a standstill in 1915 she had tried to win a decision in 1916 by forcing France to a separate peace. She failed in that and opened an ineffectual campaign for peace in December of the same year. Perhaps she did not expect it to succeed, but it at least satisfied the growing feeling of the Germans that a fair offer should be made to end the war in a compromise. Her offer was refused but she still hoped that it would eventually be accepted. Let Germany fortify herself on all sides, holding to what she had won, and when her enemies had spent themselves in further fruitless assaults they would come to reason and make terms. Russia was no longer a terror; for Brusiloff in his last reviving gasp had failed in the campaigns in Volhynia and on the Dniester, despite apparent victories. Rumania, forced into the war by a treacherous Russian ministry, had been given such a drubbing that no other Balkan state was likely to dare German wrath. In keeping with this policy of impregnable defense Germany decided to draw in her western battle front and establish it in a position which, as she believed, would resist the sternest efforts that could be brought against it.

This decision implied the belief that her line as it existed in the winter of 1916–17 was not satisfactory, and for that opinion there was a good reason. Before the July offensive of 1916 the line had made a great western bulge between Arras and Soissons, and it was here that the French and British delivered their blows in the long drawn out battle of the Somme. The result was that the salient was beaten in at the middle, between Albert and Chaulnes, leaving two small salients at the ends of what had been a large flat one. The line, therefore, between Arras and Soissons had in it two undesirable angles. Moreover, at the inner part, where the French and British cut deeply in the battle of the Somme, the line was very soft, being recently constructed, and during the winter the British improved every spell of fine weather to take another bit from the hands of the enemy. It was not of her own volition that Germany decided to shorten

her line, but through the realization that the defenses she was holding were not dependable.

To meet the difficulty the so-called Hindenburg line was constructed. Beginning near Arras it ran in a straight line to a point on the Oise five miles southwest of La Fère, and then gained the Aisne near Soissons in a westerly bending curve across the plateau that lies between Laon and the mouth of the Aisne, where it united with the old trench system. It was about 70 miles long, which was about 15 miles less than the old line. It was in reality a system of trenches four or five miles wide in well-selected positions, the trenches protected by deep wire entanglements and many redoubts and other points of concentration. The trenches themselves represented all that had been learned in trench construction during the two and a half years of the war. There were many dugouts and concrete chambers well beneath the danger point from high-explosive shells. The Germans believed that it could not be taken. In their own words it was the Siegfried Stellung, although their opponents persistently called it the "Hindenburg line." The section at Arras was expected to have to sustain severe attacks, and to make assurance stronger a switch line was constructed eight miles east of the town, starting at Drocourt to the northeast of Arras and joining the Siegfried line at Quéant.

Their preparations made they began to withdraw their heavy guns and supplies early in March. It was not until 10 March that the retirement began to be observed by the Allies, who were then pressing forward on Bapaume in their deliberate fashion. Their task became easier from day to day, and on 17 March they ordered a general forward movement on a 45-mile sector. The resistance was weak and the troops pressed forward. Bapaume, Chaulnes, Roye and Nesle were occupied with little difficulty. This process was kept up until the end of the month, the Germans fighting hard in rear-guard actions with many machine guns in position. They conducted the retreat ably and with small losses. They surrendered a region containing 600 square miles, 18 miles wide at the widest point—west of Saint Quentin—and five miles wide at its narrowest—just south of Bapaume, where the operations of the British had already eaten far into the old trenches.

The British and French following after them found the abandoned country a wilderness. Every art of a shrewd and unfeeling foe had been used to make it a desert, incapable of supporting any kind of shelter for hostile armies. Under international usages it is allowable to destroy what could have been considered useful to the enemy in carrying on his war. In the past this had been construed as applying to public property, roads, bridges and private property that obstructed the line of fire. By no nation had it been interpreted as giving the right to destroy orchards, churches, farming implements, and other means of industry. The Germans had given the rules their broadest interpretation. No building of any kind was left standing, trees of all kinds, orchards, even the young trees that would afford shelter to no living thing larger than a hare, were cut down systematically, and the graves themselves had been rifled. The towns and villages were stripped of their able-bodied inhabitants, who were sent into the back areas to work in support of the German cause. Household furniture was carried away or broken up and destroyed. The Germans, obsessed by the phrase, "This is war," had lapsed into barbarism, throwing away all the restraints that civilization had put on the conqueror's impulse to mistreat his victim. German newspapers recounted the excesses of German soldiers in this moment with pride; and the outside world has not had any evidence of a protest by any German preacher of Christian living, or others whose profession was to uphold humane ideals in Germany.

The devastation of this region cost Germany dearly. It is true it made it difficult for the Allies to fight across the devastated area; but they had only to attack in adjoining sectors. In a military sense, therefore, it was of slight advantage to the perpetrators. But its bearing on the morale of the Allied soldiers was tremendous. Here before their eyes was an argument the most ignorant could understand. It transcended the party differences, the proletarian unrest, and the many other impulses which might undermine the will to fight to the utmost. The Germans had just offered their antagonists a drawn peace and had been refused in disdain. The Siegfried line announced that the German reply was "Hammer away until you change your mind." How foolish to do a thing at that very moment which only strengthened the will of the enemy to continue to spurn a compromise!

4. The Battle of Arras.—When the Germans retreated, General Haig had already begun to renew the process of gradual encroachments, as in the later stages of the battle of the Somme. He wished to apply the same process to the Siegfried line, believing it would be pierced, but yielded to the wishes of General Nivelle, who had succeeded Joffre in the chief command of the French armies. Nivelle's plan was to deal heavy blows at each flank of the new German line and he asked Haig to attack on the north at Arras, he himself proposing to strike on the Aisne. Haig was not under the orders of the French commander-in-chief, but he recognized the more important character of the French fighting in their own country and put away his own plan and adopted that of his colleague. Arras was the northern pivot of the Siegfried line. It was nine miles south of Lens, the city of coal pits, and in the interval was Vimy Ridge, all but taken by the French in 1915 when they fought a companion battle to the British battle of Loos. It was the highest point in the vicinity of Lens and overlooked a large part of the sector. Haig massed his artillery and infantry in order to carry this sector, 12 miles wide. On 4 April he opened a bombardment that was more intense than any which had been delivered on any battlefield of the war. For four days it fell on the German positions, and when the infantry went forward on the 9th they found the first line German trenches in a state of ruin. The second was better held but it was taken after hard fighting. Next day the battle was carried against the third line, which yielded to fierce attacks in which there was much hand-to-hand fighting. In these three days the British advanced from two to four miles on a front of more than 10 miles. Vimy Ridge was carried by Canadian

troops, and the strong fortress known as the Harp was taken with the aid of tanks. It was necessary, however, to halt at this point until the artillery could be moved up. The three days of fighting netted 12,000 prisoners and 150 guns, and they left the Germans with a gaping hole in their vaunted impregnable line of defense.

During the succeeding days active preparations were made for continuing the battle. Engineers constructed roads through the conquered region, while the infantry tried to widen the gap by eating away the lines on each side. The process was made difficult by rain which fell steadily. The Germans brought up reinforcements, and delivered a strong attack astride the Bapaume-Cambrai road, 15 miles south of Arras, hoping to draw off the British troops to that place. The effort was unavailing, for the assault along the road was disastrously repulsed. On 16 April General Nivelle began his great offensive on the Aisne which did not yield the results expected. As his situation became unfavorable it was necessary for General Haig to aim his blows at strategic points in order to force the enemy to concentrate for their projection and thus save Nivelle from great pressure. In this way the battle of the British was deflected from the immediate objectives, which might have been taken in the new type of battle Haig had adopted and delivered against positions he could have little hope of taking.

The battle of Arras lasted from 4 April to 17 May, and it was followed by three weeks of intermittent attacks of a minor nature. It resulted in the advance of the British line on a front 22 miles long, for the most part to a depth of four miles. Six miles of the Siegfried line was taken in this movement, a thing the Germans had thought could not happen. It was at Bullecourt, two miles from Quéant, where the Drocourt-Quéant, or Wotan, line left the main system, that the Siegfried line was first cut. The feat was performed by Australian troops on 3 May, who not only passed the trenches themselves but took the series of concrete machine-gun positions behind them. Then they repulsed a counterattack that seemed for a time completely to master them. With the Germans surging up on three sides of them until they were huddled in barely 500 yards of trenches, they stood their ground until support arrived and slowly won the adjacent space until they had elbow room. Against them were sent the famous "Cockchafers," of the 3d Prussian Guard division, to win back the lost section of the impregnable line. The British guns promptly placed a close barrage behind them, while the Australians left their trenches and charged into the advancing Prussians. Caught between the barrage and the Australians the "Cockchafers" took refuge in the abandoned trench by which they had approached, where they were all but destroyed. The incident settled the fate of the Bullecourt position. Within a week another mile was sliced off the Siegfried line, just south of Bullecourt, and means were found to make the gain secure. When the battle ended the British had taken more than 20,000 prisoners and 257 guns. The German losses were estimated at 350,000 which was in excess of the estimated British losses.

The most significant thing in the battle, however, was the fact that it confirmed to the Allies their confidence in the battle for limited objectives as a means of eating steadily through the strongest defenses the Germans could construct. It confirmed the lessons of the later fighting in the battle of the Somme. Here was a method by which the Germans could be defeated, if the Allies would follow it long enough. It was only necessary to persist until the line was worn thin. Steady fighting and the infliction of losses would finish the task in good time. And so the British took heart. They felt that the result was assured.

5. The Second Battle of the Aisne.— When General Haig struck at the northern end of the Siegfried line near Arras he acted in agreement with General Nivelle, who was about to strike at the southern end at Laon. The task of the Frenchmen proved harder than the task of the British; for Laon is situated on a plain protected by very strong positions which the Germans had well fortified. Ten miles to the west and 10 miles to the south ran the battle-line; for the city was in the great angle of the lines. Due west it was protected by the Forest of Gobain whose strength the French had felt in their pursuit of the retreating Germans early in April. Rebuffed here Nivelle turned his attention to the south and east of Laon. But here the Germans had the advantage of strong positions. Their line ran along the heights that border the Aisne River, limestone spurs in which an excellent trench system had been cut. Nature had so arranged them that one commanded the other, so that if the French took the nearest they would come under fire of other positions. This line of heights began at the Ailette, a small stream seven miles north of the Aisne, and stretched away to the east, passing around the angle in the line, to the vicinity of Craonne, a distance of 25 miles. On the crest of the heights ran from east to west for a distance of 16 miles the celebrated Chemin des Dames. It was an excellent artery of communication behind one of the strongest positions in France.

General Nivelle decided to break through this line and take Laon. He had won fame in the war by hard and brilliant blows. The slow and methodical fighting of Haig was not in keeping with his temperament, which was ardent. His best work had been the recovery of the positions north of Verdun in two swift and powerful blows for which the most elaborate and accurate preparations were made. He proposed to follow a similar method on the Aisne and on a much grander scale. But there was this difference. At Verdun he used the method of the limited objective, while on the Aisne he proposed to smash through the line and reach Laon on the second day of his battle. Since each part of the opposing defenses commanded the adjoining part so completely, he determined to attack in force all along the line at the same instant. Not only along the heights north of the Aisne, but far eastward to the high ground that runs away to the east of Rheims he decided to carry his battle. Along a front of 50 miles he proposed to launch the flower of the French army in one grand charge.

On 6 April began the bombardment that prepared the way for the actual attack. It lasted with increasing fury until the 16th when the infantry went over the top at 6 A.M. on a day

that groaned with a storm of sleet and snow. Important advances were made at various points and 11,000 prisoners were taken It was not doing badly but it did not lead the French to the gates of Laon. Next day the snow-storm with a driving wind continued, but the French soldiers did not falter. They held stoutly to what they had won, despite heavy counterattacks and even made gains in the region of their advance on the 16th. Far to the right, east of Rheims, where the Germans were placed on a strong series of hills, between Nogent l'Abbesse and Moronvillers, the battle waged fiercely. This position did not actualy bar the way to Laon, but it was a bulwark behind which the Germans would organize dangerous flank attacks if the French should advance in the direct line to the Laon plain. It was a weak point in General Nivelle's plan that it demanded so many difficult things to insure success. The attack on the Moronvillers position was entrusted to General Anthoine. He had 75,000 men to carry a position seven miles wide defended by 80,000 infantry and an artillery force of 1,000 guns. He himself was trained as an artillery officer and well knew the need of artillery in carrying the position before him. He massed a vast number of guns against the German position which consisted of three lines of defense, one at the foot, another on the slope, and another at the crest of a ridge that ran across his area of battle and had strong commanding positions on each side. General Anthoine knew that his guns had first to destroy the German positions, and he did not neglect his barrages through seven entire days. The infantry went forward at dawn on the 17th and penetrated the first German line with little difficulty. On the flanks it stopped at the second line, but the centre burst through that barrier and seized and held the crest of the slope before it. Next day the centre secured its advanced position and the flanks worked away to extend their lines up the slopes. The 19th and 20th brought heavy counterattacks, but the French held their positions for the most part. From the 21st to the 28th there was fighting for local gains only. The battle seemed to have come to a breathing spell.

The pause was accompanied by a feeling of depression. In reality the progress was not discouraging. In 12 days 20,780 prisoners had been taken with 175 guns. In view of the necessity that the German strength should be eaten down by the hammering process this was not a bad showing; but it caused great dissatisfaction, mainly because Nivelle had talked so confidently about breaking the line on the first day that the French people were seized with despair because the brilliant program was not realized. His losses had been heavy, but not beyond the normal cost of such gains under such conditions. But the murmuring was a serious thing. It indicated a lack of confidence at a time when discouragement was dangerous.

On 28 April the Premier, M. Ribot, visited the battle front with M. Painlevé, the Secretary of War, and held a conference with the general in command. The result was that General Nivelle was removed from his position and General Pétain took his place as commander-in-chief on the northern and northeastern sectors, where the main battle was being fought. At the same time General Foch became chief of staff, a position for which he was eminently fitted by training and temperament. General Nivelle's plan of battle was a survival of the prevalent idea of the early months of the war. It looked to a break through the line, as in the strategy of other days, with a sweep around the rear and the capture or stampede of a considerable portion of the opposing force. It failed because under existing conditions it was impossible to take all the lines of defense before reinforcements could be brought up to fill the gap that an intense attack had made. The new strategy looked to wearing down the man power of an opponent. A break through was reserved for the time when the line should be too thin to resist longer. Pétain believed in the new strategy, and so did Foch, with a slight difference. From the time Pétain controlled the military policy the battle along the Aisne entered a new stage, in which the purpose was to take limited objectives.

No further hopes were entertained of taking Laon. It would be sufficient to complete the struggle for the heights as a means of bettering the enemy's position, and not, as Nivelle intended, as a preliminary step to a move on Laon. Thus Pétain took up his work. He saw that it was necessary to take Craonne and the California Plateau that ran west of it, commanding the view of the region to the north as far as the plain around Laon. He decided also to finish the winning of the positions for which Anthoine had been fighting around Moronvillers. The second of these tasks was completed in a gallant charge after an intense bombardment on 20 May. The first demanded a more extended battle. The days of 4 and 5 May saw bitter fighting for Craonne and the California Plateau. To rush up the slopes under fire from the machine guns of the Germans, to dig in on the crest and to repel successive counterattacks were tasks for which the French infantry were fitted by long campaigning. Having obtained a foothold, the next thing was to extend their lines until the whole of the plateau was held, an end that was achieved by the middle of the month. On the 16th the French were in possession of most of the famous Chemin des Dames, from its eastern end at Craonne to its western end near Fort de Malmaison. On the 20th the Germans delivered a great counterstroke along this whole line, but it failed with heavy German losses. From that time the battle front became quiet.

Reverting to the original plans of General Nivelle, we shall recall that after the Germans fell back to the Siegfried, or Hindenburg, line a design was formed to smash in each end of this line, and that General Haig undertook the task at the northern end while Nivelle undertook it at the southern end. The results were the battles of Arras and the Aisne. Both failed of their ends. Although fought fiercely and with moderate success for the Allies, they left unshaken the pivots at which they were aimed. They inflicted severe losses on the enemy, considerably more than half a million casualties. This was their only value; for the slight gains of territory were without significance in the main trend of the war.

6. The Third Battle of Ypres.— When General Haig began the battle of Arras he postponed a plan he had made for a strong offensive in the Ypres sector with the general design of

breaking through the German defenses, recovering the Belgian Coast and turning the invaders out of Belgium. As soon as the French operations on the Aisne ceased he proceeded to put this scheme into execution. Twice before had the British sustained heavy battle in this sector. On each occasion they were weak and were forced to hang on by sheer sticking ability with great losses. In these battles they were forced back on Ypres until on the east they stood hardly two miles in front of the town, while the Wytschaete-Messines Ridge, three miles south of it and commanding the surrounding plain for several miles, fell into the hands of their opponents. The existing situation was annoying, and if the Germans should have the opportunity to assume the offensive in large numbers they would be in position to start with a great initial advantage in some forward movement. The attack about to be described did not yield the British the Belgian Coast, but it enabled them to gain important ground east of Ypres, ground which, if held by the Germans in their April drive of 1918, would have carried them in the initial attack a long way toward the Channel ports. General Haig's first procedure was to attack the Wytschaete-Messines Ridge and thus remove the menace that hung over Ypres on the south. This position, which was a salient, was six miles long on the top of the ridge, but the German lines that ran around its western slope were 10 miles long. It was defended with three lines, one at the base of the western slope, one on the crest of the ridge and another along the base of the salient, which was well down the eastern slope of the ridge. A mile further east was a fourth line, passing through the town of Warneton, on the Lys. Besides these lines were many concrete machine-gun posts, redoubts and battery positions, skilfully placed to enfilade every possible avenue of approach. To take the third line was to hold the ridge: to penetrate the fourth was to break through the existing system of German defense.

At this time Great Britain had about 2,250,000 men under arms in France and Belgium. They were organized in five field armies, which in the spring of 1917 lay as follows, from north to south: In Belgium, the Ypres sector, the 2d Army under General Plumer; in the Lys-Lens sector, the 1st Army under General Horne; in the Arras sector, the 3d Army under General Allenby, soon to be succeeded by General Byng; in the Bapaume sector, the 5th Army under General Gough; and in the Saint Quentin sector, the 4th Army under General Rawlinson. They were well-trained men, seasoned by the Somme and Arras fighting, the equal of the Germans and French in fighting qualities; and they were amply supplied with artillery and ammunition.

The Germans on the same front were commanded at this time by the crown prince of Bavaria, who had risen steadily as a commander since the war began, somewhat to the discomfiture of the imperial crown prince, whose failure at Verdun was notable. From the North Sea to the region just south of Ypres lay the German 4th Army, commanded by General von Arnim, who had come to be considered one of the best German commanders in the field. South of his command was the 6th Army under Gen. Otto von Below. The Germans had ample forces; for by this time the Russian front had become quiet, and it was possible to move troops freely from that area to France. General von Arnim was keen enough to observe signs of activity behind his opponents' lines late in May 1917, and rightly concluded that he was going to be assailed in the Ypres region. He also divined that the attack would begin at the Wytschaete-Messines Ridge; for he could see that it was a thorn in the side of the British, who could not attack on a large scale without first removing this obstacle.

General Plumer, commanding the 2d Army, was a vigilant and tireless officer, and he had been in position before the ridge for two years when the great attack was made. As early as July 1915 he began to construct mines under this position, taking advantage of the clay subsoil which lent itself to mining. Twenty-four mines were constructed, 20 of them in the zone it was at last decided to attack. One of these was destroyed by the Germans, but the 19 others were intact and filled with over 1,000,000 pounds of ammonal when the critical day arrived. The Germans knew well that the mines were being constructed and countermined, and many battles were fought underground between the hostile mining parties. Behind the lines railroads were constructed on the surface and pipes were laid for the distribution of water in the trenches with provisions for carrying them forward as soon as the lines had been advanced. So well were the plans made that running sterilized water was delivered to the soldiers in half an hour after they had won a new objective.

The day of attack was 7 June, after a hurricane of shell had been poured on the ridge for several days. The guns on the British side fell away somewhat during the night of the 6th, but the German guns continued to roar as on the preceding days. At 3:10 in the morning there was a convulsive shock and "a sound compared to which all other noises were silence." Nineteen mines went off at once, flames rushing up like volcanoes, carrying trenches, concrete emplacements, solid stones and twisted human bodies in one fire-lit mass. Great clouds of heavy gases mushroomed the sky and slowly drifted away as the artillery resumed its work.

Three army corps were in front of the ridge and sprang from their trenches at the first tremor of the explosion. They plunged forward into the clouds of smoke and dust, overran the first German line of defense, which had suffered severely from the bombardment, and gained the crest of the ridge with 19 craters where the second line had been, from Hill 60 on the north to the edge of Messines on the south, a distance of more than four miles. Brave Germans held out in isolated positions, fighting desperately in a dazed condition, but they slowly yielded to the advance of the men of the 2d Army. By 3 o'clock in the afternoon the British field guns had been carried forward by a miracle of the transportation department, and the attack on the third line was made with such quick effect that by nightfall this position, the objective set by General Plumer for the first day of the battle, was fully reached. At an unexpectedly small cost to his own army he took 7,200 prisoners and 67 guns and inflicted a great loss on the enemy.

On the afternoon of the 8th General von Arnim brought up fresh troops and counterattacked along the new front, but they were beaten off easily by the British who consolidated their lines and settled down in the new trenches in security, two and a half miles in front of the position they had occupied for nearly three years.

In General Haig's plan Messines was but a preliminary stroke to a renewed battle of Flanders. It relieved Ypres from danger on the south. The next thing was to press back the Germans on the east of the town. Here they sat on a series of hills, each a little higher than the one on its west side, running back to the ridge at Passchendaele eight miles east of Ypres. Through these positions General Haig proposed to fight his way by means of the limited objective. In his way stood skilfully constructed lines of small concrete forts, which the soldiers called "pill-boxes," large enough for 20 to 30 men armed with machine guns, and strong enough to resist the shells of light artillery. These works were devised by the Germans in lieu of the deep dugouts which could not be used in the soil of this part of Flanders.

In order to deliver the proposed blow on the Ypres front General Haig redistributed his armies. First he extended the front of the 3d Army so that it held all the ground between the limit of the 1st Army at Arras and the limit of the French near Saint Quentin. As this process went on the 5th Army, which was thus forced out of the southern trenches, was moved northward and placed in line just north of the 2d Army, which held the sector immediately south of the point of the Ypres salient. As the 3d Army continued to extend southward the 4th Army also moved northward and took position on the coast in the Nieuport sector. Thus the battle line was arranged as follows: At Nieuport, on a front of four miles, the 4th Army; south of it, on a 20-mile front but protected in part by the inundated area, were the Belgians; next, on a front of five miles, was the French 1st Army with General Anthoine for commander, fresh from his successes at Moronvillers; then came the British 5th Army on a seven-mile front from Boesinghe to the sector of the 2d Army, which carried the line southward as far as the Lys at Armentières.

Out of the troops in this area General Haig arranged two striking forces. His 5th Army with the help of the French on its left and of the 2d Army on its right was to drive the Germans off the hills east of Ypres. That done the other striking force, the 4th Army, was to work forward along the coast keeping in touch with the fleet off the Belgian shore.

The affair at Messines was over by 12 June, and it would have been well if the 5th Army had been pushed forward immediately; for the task before it was long and the five months left for field operations before the winter set in were none too much for the work in hand. But delays occurred, and it was not until the last days of July that a start could be made. While affairs were in suspense, the Germans, suspecting the intentions of their opponents, made a lunge at the 4th Army at Nieuport and drove a part of it to the west side of the Yser. It was not an important battle, but it took from the British a portion of their bridgeheads on the east of the stream, which would have been serviceable if they had been called upon to carry out their portion of the original plan of campaign. During the month of waiting the Allied artillery searched out the weak spots in the enemy's line with the utmost care. Many times the trenches were drenched with gas, in the use of which the British had become expert. At 3:30 in the morning of 31 July the whole line from a point two miles north of Boesinghe to the Lys, a distance of 15 miles, broke into a crashing barrage behind which the French and British infantry rushed forward to the first lines of the enemy, taking them at once. They then charged the second lines which were taken for the most part, though the resistance was hard in some parts. At the end of the day all the objectives of the French and the 5th Army had been won and in some cases they had been exceeded, while more than 6,000 prisoners had been taken. It was a brilliant beginning and the army rested from its day's work in contentment. That night began four days of steady rain and the ground turned into seas of mud. It was not until 16 August that it was possible to renew the battle. On that day a general attack was launched. It succeeded on the northern part of the line, but through the resistance of a formidable system of "pill-boxes" in the region along the Menim road and three miles north of it the advance was held up from the beginning, although there was desperate fighting and great expenditure of courage on both sides. Next day the rain returned in torrents and there was a fortnight of steady downpour. It was a full month before the water receded into the streams and the ground became dry enough for waging battle.

Meanwhile, General Haig revised his method of fighting. For two weeks he had encountered a new system of defense devised by General von Arnim: Holding his first line with only enough troops to disorganize an advancing line he massed his troops in the second line and threw them on the foe as they came into the zone of fire of the second line. In this way his counterattacks were made very effective. At the same time he placed his "pill-boxes" in such positions that they completely raked the area of approach. By this means he repelled the British in their attack of 16 August with heavy losses. It was a new fashion in fighting and became known as "elastic defense." General Haig gave it careful consideration during the month of enforced idleness while he waited on the weather. The best thought of his officers was given to the machine-gun defenses. By a system of careful observation the "pill-boxes" were located and marked on the map and high explosive shells were fired at them when the battle was renewed. In this way many of them were destroyed, while the air was so filled with the fumes of the explosives that the men inside were rendered unfit for fighting. Another way that proved effective was to approach the work behind a barrage and suddenly make holes in the barrage on each side of the "pill-box," allowing the infantrymen to gain the unprotected rear where hand grenades quickly disposed of the defenders.

By such methods on 20 September a second advance in the same region proved successful. The troops worked their way forward across lines of defense that seemed beyond human ability to

take. On 26 September another advance was made, and still another on 4 October. Then came a long series of struggles for limited objectives, all fought through in rain or mud. It was remarked when an unusual downpour came it was a certain sign that a British attack was scheduled for that particular moment. Thus through October the lines crept forward, and on 6 November the town of Passchendaele was gained with the ridge which dominated the surrounding positions. The weather had done its worst, but pluck and courage had triumphed. The third battle of Ypres, 31 July to 6 November, had ended with the British on high ground and the Germans seven miles east of the ruined town.

Nevertheless the battle was a British failure. It was undertaken as the first stage of a large campaign. All that had been won in more than three months was on the plan for the first fortnight. When it ended there was no opportunity to go on with the original plan. The 4th Army at Nieuport was not called into action, and the Germans sat securely for another winter in the coast towns of Belgium. But the failure was not due to bad fighting or defective leadership; never did the British acquit themselves better. They took 24,065 prisoners and 74 guns and slew many; but their own losses were heavier than the losses of the Germans. Two things were against them in this struggle: the weather, which should have been foreseen, as it was ordinarily bad in Flanders, and the removal of German divisions from the Russian front. But the struggle was not all lost. It served to reduce the man power of the Germans and to push them back on the east from dangerous proximity to Ypres and Hazebrouck. They were by that much — five precious miles — further away from the Channel than they would have been when in April 1918, they made their last great drive in that direction, and nearly reached the hills southwest of Ypres from which the glistening waters of the Channel can be seen on a clear day. In finding the balance of loss and gain the conclusion may be that the operations were worth all they cost in death and miserable living.

While the third battle of Ypres was being fought with so much difficulty during the months of August to November General Pétain conducted two brilliant minor engagements which had important local results and served to restore the drooping spirits of the French people, so badly shaken by the failure of the second battle of the Aisne. The first was at Verdun and the other was on the crest of the Heights of the Aisne, where the great battle was broken off before the Germans were driven from their footholds.

In the Verdun engagement the French were under the immediate command of General Guillemat and the Germans were under General von Gallwitz. The first had reason to believe his opponent was about to undertake some aggressive movement on the west bank of the Meuse, where the Germans held Hill 304 and Mort Homme, positions not affected by Nivelle's brilliant thrusts of October and December 1916. General Guillemat made his arrangements with great thoroughness. From 7–17 July he conducted several actions with limited objectives which gave him advantageous points for an attack along his line on both sides of the river. He opened the battle in the early dawn of 20 Aug. 1917, after three days of intense bombardment which played havoc with the German advanced trenches. All his objectives were won, and in the fighting of the succeeding fortnight the Germans were pushed back on each side of the river until they stood, on 9 September, practically where they began the great battle on 21 Feb. 1916. In these engagements the French took more than 10,000 prisoners and inflicted heavy losses in killed and wounded.

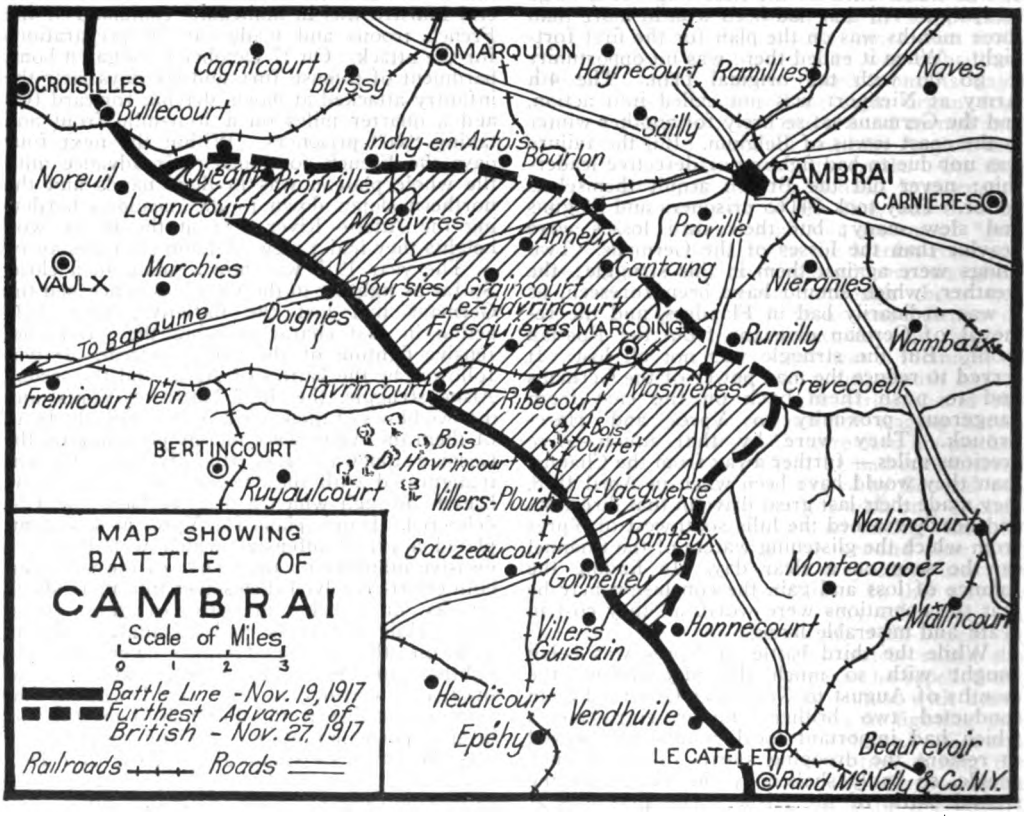
General Pétain then turned to the Heights of the Aisne, where the Germans still held out on the northern edge of the elevation west of the California Plateau. At this point the plateau was three miles wide and six long and the two lines faced each other across it. General Maistre was in immediate command of the French troops and made careful preparations for the attack. On 17 October he began a bombardment of intense fury and six days later the infantry attacked at dawn, driving forward two and a quarter miles on a four-mile front and taking 8,000 prisoners. Within the next four days the French continued their advance until the whole plateau was in their hands and the northern slopes down to the meadows bordering the Ailette River. From the newly won heights they had a view of Laon six miles away.

The year 1917 was now coming to a close. So far as fighting in the west was concerned the Germans had lost the initiative, their only action in that character being the purely defensive fighting of the spring retreat. It was followed by the battles of Arras and the second Aisne struggle, the third battle of Ypres, and the two blows of the French just described. In all of them the Allies were merely pounding on the German stonewall. It is true Nivelle's battle was inaugurated with the view of making a grand breach through which a decisive blow could be delivered. Haig's plans for Ypres also contemplated a grand offensive which would have a decisive influence on the course of the war. But both efforts resolved themselves into mere shock attacks under the pressure of dire necessity. Haig at Arras and Pétain at Verdun and on the Aisne Heights were merely fighting for limited objectives, taking toll of lives and territory as they could without imagining that they would do much to end the war in that particular effort. Of the same nature was the battle of Cambrai, 20 Nov. to 7 Dec. 1917, which General Haig precipitated as soon as he could break off the battle of Ypres.

The conduct of this battle fell to General Byng, commanding the 3d Army, who made his preparations with great skill. Instead of using a long bombardment to destroy the enemy's wire entanglements he employed a large number of tanks sending them forward behind a barrage. By using the greatest care all the tanks were brought into position secretly, and the attack was a complete surprise for the Germans. The tanks made great gaps in the wire through which the infantry quickly passed. The outposts fell at once and the main line went soon afterward. By 10:30 A.M. the strongly tunneled reserve line of trenches was taken and the attacking force confronted only a series of enemy rear positions. Against these places the attack was continued on the 21st, with some important gains. But the German resistance

was not broken, and at the close of the day the British troops were exhausted and the Germans were bringing up fresh divisions. Here the lines remained five days with hard fighting and little advantage for either side.

The battle had now reached its crisis. The British had driven a salient into the German positions 10 miles wide and six deep, but they were unable to go farther and their opponents were concentrating superior forces against them, preparing to pinch out the newly formed salient. Had General Haig been able to bring up an equal number of fresh troops and carry the movement on to a complete success it would have been well to proceed with the battle. Otherwise, prudence demanded that he break off the contest, fall back to a favorable position



in the salient, and be satisfied with what he had won. To adopt such a course required more self-control than the British general displayed. Following the impulse to hold on in an extreme situation he remained where he was and received the storm that General Ludendorff was preparing with great care. It broke on 30 November. A strenuous attack was delivered on each flank of the salient, while a furious charge was delivered on its centre. This triple action lasted from 30 November to 3 December, the British lines being pushed back on both flanks until the salient became dangerously narrow. Then General Haig was forced to realize that he must draw back his advanced lines. During four days' fighting he carried out the task of readjustment and ended the operations known as the battle of Cambrai on the night of 7 December with his lines about two and a half miles nearer Cambrai than when the battle opened on 20 November. In the first week of the fighting the British took 10,500 prisoners and held 60 square miles of territory that had previously been occupied by the Germans. They had also inflicted losses that were heavier than they had sustained.

The battle of Cambrai was the last of the blows of attrition in the west. In the future a way was to be found to break through the trench system that had existed from September 1914, although neither side was to find a way by which the breach could be made to result in one of those great encircling movements that was the dream of military men on each side. The Cambrai battle was notable for the success with which tanks were employed in it. These instruments of war, first used in the battle of the Somme, were originally hailed as a very dangerous fighting machine. They were considered a kind of mobile machine-gun nest. The Germans caught at the idea and tried to improve on it by making still larger tanks, assuming that they would be more formidable through being larger. As a fighting machine, however, the tank was only moderately successful. Its best service was against wire entanglements, and it was in the battle of Cambrai that this use was given its earliest perfect demonstration. It was here shown that the tank, by doing the work of the initial bombardment, made it possible to employ the element of surprise, pro-

1 Tank going into action crossing an unused trench

2 Tank moving to the support of troops at the capture of Juvigny

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1 Infantry ahead of a tank that had just charged a trench
2 French whippet tanks going into action at Villers Cotterets, west of Soissons

vided there were adequate air protection and care in assembling the surprising forces.

THE DECIDING CAMPAIGN OF 1918.

1. The Crisis of the War.—In the beginning of 1918 the will to war was visibly lower in the peoples of Europe. Austria, Bulgaria and Turkey were at the limit of their powers and their peoples had become apathetic. On the side of the Entente the Russian war spirit had disappeared and with it went the old Russian government. In Italy war weariness had made vast strides; and it was known that only the presence of British and French troops in large numbers had stayed the tide of collapse late in 1917. In France and Great Britain the burden of war was heavy and although the people did not talk of quitting, a disposition to discuss terms showed that they longed for peace. In Germany there was a great deal of suffering and a corresponding desire for peace; but national pride was fed by the achievements of the army and overcame the popular war weariness. It was much to the German that his country had held her own for three and a half years against the strongest states in Europe, and while doing so had won great victories. A nation still gaining victories in the field could not be expected to cease fighting and ask for peace; but if victory should turn to defeat, her restrained war weariness was likely to have full sway, and startling results might be expected.

Germany, however, saw no reason to fear such an untoward turn of events. On 3 March she completed her conquest of Russia by forcing the Bolshevik government to sign the treaty of Brest-Litovsk. Since the beginning of the year it had been evident that this government was at her mercy, and the process of transferring troops from the Eastern Front to the west, which had been carried on to some extent in 1917, now went on apace. Her Eastern Front no longer existed. In 1914 her plan was to crush France and then throw all her strength against Russia. After many months of hard fighting she had succeeded in crushing Russia and was about to throw all her force into the work of winning a victory in France.

General Ludendorff's memoirs contain interesting light on the German view of the situation at the time. He had choice in 1918, says the author, of two policies, to attack or to take the offensive behind strong entrenchments. He adopted the first course for several reasons: (1) It was necessary to win a great victory to keep the German prestige alive in Austria-Hungary, Bulgaria and Turkey; (2) it was likely that the Allies would break through any way if the defensive policy was assumed; and (3) there was every reason to win a decision before the Americans arrived in force. Having come to this conclusion orders were given for complete preparations for an attack on the grandest scale.

The sector chosen for the blow was north and south of Saint Quentin, which was believed to be the weakest point in the Allied line. Other sectors were debated and rejected, the Ypres region because the ground there was too muddy in the early spring, and the sector of the Chemin des Dames because it was too strong. Ten weeks were given to special training for the attack. In the beginning Germany had 192 divisions in France, and more than half of them were placed opposite the British lines. For breaking-through tactics she set aside 70 of the best.

For meeting the fate gathering against them the Allies were badly situated. In the first place they had the exterior lines of a great angle. By massing troops on the interior the Germans could strike at one side or the other with concentrated force, and the Allies could not quickly move reinforcements around the point of the angle. The railroads within the angle were numerous and well planned for communication across its area, while those to the west of it ran off to the south toward Paris, and those on the south side of the salient ran off to the southwest.

Another disadvantage of the Allies was in their disunited command. The German armies moved at the direction of one will, which happened to be the will of General Ludendorff, a master of the military art. While General Pétain and General Haig were always in perfect accord they were nevertheless acting in separate spheres of activity. In an emergency there was no time to ask for co-operation, even though it was certain that it could be obtained for the asking. This division of the command was a weakness well understood by the military experts on each side, and efforts had been made for its removal. In November 1917, after the disastrous campaign in Italy, the Allied War Council at Versailles was created to obtain greater unity of action. Its functions, however, were only advisory. Its first members were General Foch, for France, Gen. Henry Wilson, for Great Britain, and General Cadorna, for Italy, and later General Bliss for the United States. The creation of the council was chiefly the work of Mr. Lloyd George, who spoke so frankly about the need of unity that he aroused a storm among his political enemies at home. It soon appeared that the council had little real authority, and the three eminent men first appointed resigned to be followed by persons of less prestige. Then — in February 1918 — an attempt was made to increase the authority of the council. At this Sir William Robertson, the British chief of staff, resigned. Immediately a popular outcry was raised against the Prime Minister, but he appealed to the good sense of the country and weathered the storm. He did not dare, however, to go farther in his efforts in favor of unified command. That was a step which only a vast disaster could wring out of the Briton.

While, therefore, General Ludendorff with much skill massed the entire German energy in the great salient whose point was on the Oise, the British on the west side and the French on the south side of the salient waited his attack in confidence. They did not believe he could break through. They took no effective means to reinforce each other as need should be. Neither general had large reserve forces to repair a breach, if one were made. Each counted on the old methods that had held good at Ypres, the Somme, the Aisne and Verdun, by which it was possible to hold back any assault with only a slight dent in the line of defense.

2. The Offensive of 21 March.— The German blow was expected by the Allies. All through the late winter the newspapers had talked about it. As the weather became warm in March and the blow did not fall there was a

tendency to decry the danger. Whether it would fall on the British north of the Oise, where the 5th Army under General Gough was in position, or on the French along the Aisne positions it was impossible to say. The Germans promoted these doubts by making preparations for attack at each place, and near Ypres as well. Later on they attacked at each of the other places, so that none of the preparations were wasted.

The 5th Army of the British held a front of 41 miles, from the Oise to Gouzeaucourt, 10 miles southwest of Cambrai. It had 11 divisions in line and five in reserve. North of it, as far as Arras, a front of 23 miles, was the 3d Army under General Byng with 10 divisions in line and five in reserve. These 31 divisions probably contained more than 500,000 men. Most of them became involved in the battle that was about to begin.

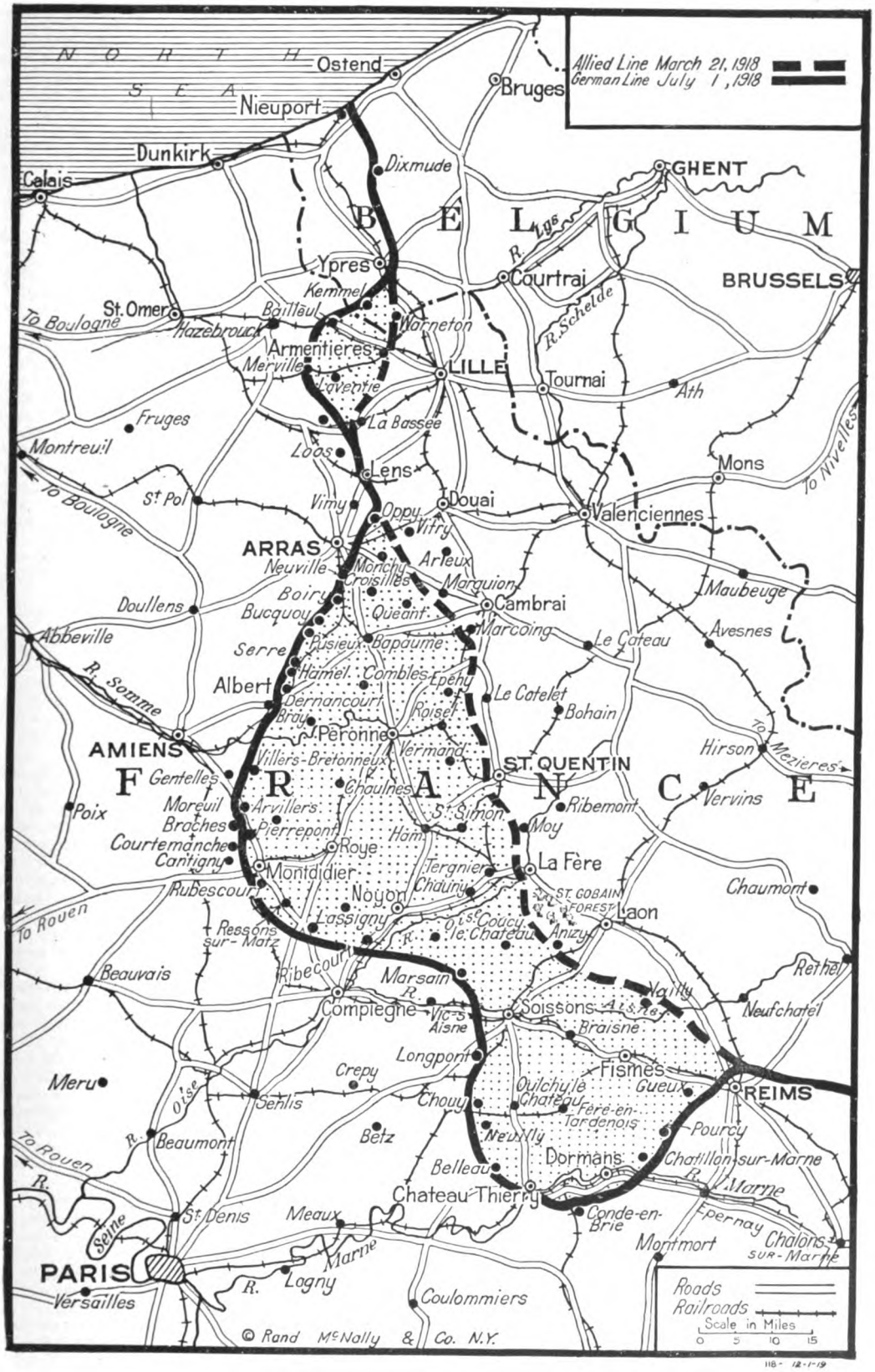
The Germans had determined to attack between Croisilles and the Oise, a front of 50 miles, which included all of Gough's and nearly two-thirds of Byng's sectors. In their first line in this area they placed 37 divisions, about 500,000 men, as the German divisions contained about 13,500 men each. They assembled large supports behind the first line and brought them up as needed. They concentrated efforts at certain points which were critical for holding the spaces near them and here they outnumbered the British as much as three to one. Two of these important points were near Saint Quentin and one was near Cambrai. The German High Command took care that the breach to be made was wide enough to permit extensive operations, if the plans went as desired.

The attack was made in the morning of 21 March. A persistent fog hung over the country. At 4:45 an intense bombardment with all kinds of guns was opened. A large number of gas shells were thrown against the British back areas and the gas was held down by the moist air, producing great confusion. High velocity shells fell that day 20 miles behind the front line along most of the area attacked. The men in the trenches suffered frightfully. The fog was so dense that their gunners could not see 50 yards ahead, and no one knew what to shoot at or what to expect. Communication with the rear was impossible except by wireless. In this confusion the men lay in their trenches awaiting attack. It came but not as in previous battles. In one place it came at eight o'clock, at others it arrived later. By 10 the attack was general. The defenders could not see the approaching troops until they were actually upon them. Specially selected troops were sent ahead to try out the weak spots in the defense. When a breach was made signals were sent up and other troops were rushed forward to improve the advantage that had been gained. Thus it happened that the line was penetrated at many places while at many others it held firmly. This process of penetration was known as infiltration, and under it the line of defense crumbled until it was reduced to broken bits, each battling for its existence. In many cases the broken remnants held their own, fighting off the German assaults until the last. In other cases they fell back from one place to another as they could, fighting delaying actions. At one o'clock the fog lifted, but two hours earlier the advanced line had been generally taken and the second line was being assailed, heavily in places. All through the afternoon the struggle went on and when night came the Germans had worn the second line thin 10 miles north of Saint Quentin and had made large gains at the southern end of Gough's line. During the night the British made some readjustments of their positions and prepared for severe attacks on the following day. Airplanes reported heavy concentrations behind the enemy's lines.

Next day the situation was clearer though no less critical. General Byng's army held its own though hard pressed. General Gough, however, was forced back through the system of trenches that served for the second line of defense. They proposed to stand firmly at the third line, but in the afternoon a gap was made in the thin line of defenders as they fell back and the Germans poured through in large numbers. They seized the third line before it could be made secure and during the night General Gough was forced to withdraw to the east bank of the Somme, a distance of eight miles. Later in the night he came to the bitter conclusion that he could not afford to stand on the east side of the river and risk battle against the masses of opponents that were following him, and he issued a second order directing the army to cross to the west side. The movement was executed with difficulty, so great was the German pressure.

While it was being carried out a still greater danger occurred in the area north of Péronne, where no friendly river offered cover. This part of the lines was firm at first but had to fall back to keep its adjustment with the southern part. In the afternoon of the 23d, while the withdrawal was in progress, a gap appeared at the point where the 3d and 5th Armies joined, the Germans threw themselves into it and turned against each edge in order to widen the gap. Now did the quality of British courage that has been called "bull-dog" show itself in the most valuable manner. Beaten battalions stood in the breaches and fought until they were a shadow of their ordinary strength. A brigade of South African troops held one position until it contained only 100 unwounded men. Teamsters, engineering units, men separated from their commands, and any others who were swept backward before a retreating army were rallied, and the gap was filled with them. Thus it was that by hook and crook the Germans were held back until the lines could be re-formed. The 24th and 25th were critical days, and only the stoutest resistance by men already at the point of exhaustion saved the day for the salvation of Britain. By the 24th French supports began to arrive on the southern section of the line attacked. Next day they were present in larger numbers and took over a 12-mile section of the line north of the Oise, the displaced troops being moved northward to help the hard-pressed division there.

The events of these four days made a profound impression in France and Great Britain. Face to face with complete disaster the rulers now discarded their opposition to a unified command. Representatives of each government held a meeting in France, at which the critical decision was taken, 25 March, to appoint Gen. Ferdinand Foch commander-in-chief of the Allied armies in France with unlimited



GREAT GERMAN OFFENSIVE

authority. It was the best day's work of the war on the side of the Entente Allies. The man named was the greatest general the war brought to the front. He was a master of military science, a great strategist, a well-poised commander in difficult times, a genius for seizing the right moment for an offensive and a leader who knew how to inspire confidence in his subordinates. In taking this step the Allied statesmen were supported by the peoples of their own countries, and particularly by the influence of President Wilson, who was beginning to make the United States felt in the higher policies of the war.

Foch took command at once. During the first day the situation seemed desperate. The 19th British corps, just south of the Somme, had been driven back 20 miles in five days and was at the point of collapse. Twenty miles to the west was the important railroad centre of Amiens. If it fell the entire line of communication between French and British armies would be demolished. The Germans realized their opportunity and were pouring their forces into this sector to take the city if possible. Could the weary 19th corps withstand them? The situation was saved by a motley brigade of men gathered up behind the lines, among them the 11th Regiment of American Engineers who had been constructing bridges behind the British lines. The brigade was commanded by Brigadier-General Carey. The 26th was thus a day of grave danger, but it was weathered without a collapse, probably because the Germans were nearly as weary as the British. They had outrun their transports and heavy guns and there was a slight weakening of pressure on the 27th at the centre of the great salient that a week's fighting had created.

The engagement now passed into another stage. It had as its special local problem the capture of the Paris-Amiens Railroad, the main line of communication behind the Allied defenses. South of Amiens the road bends eastward four miles before it resumes its southward course to the capital, and at this point it is only seven miles from Amiens. Could the Germans cut through to this bend? On the 28th they were only seven miles to the eastward at Démuin. General Foch was collecting a mobile force, a mass of manœuvre, to throw into this part of the field, and the railroad which the Germans were trying to capture was the line by which they would have to arrive. Could the British hold on until the expected French forces could detrain? That was the fateful question.

General Haig concluded that Gough's 5th Army was unequal to the task of defense and withdrew it, putting in its place a body of hastily organized troops called the 4th Army to which General Rawlinson with his staff was transferred from the old 4th Army. For five days they held back the attacks of their opponents, whose only gain was to thrust a sharp angle to the west at Moreuil, where they were five miles from the Paris Railroad. It was retaken two days later, passed to the Germans on the next day, and was recaptured by the British on the day after that, which was 1 April. On this day the French were arriving in force and took over the line to a point five miles south of the Somme. After two days of relaxation the drive was renewed on 4 April, when the French were driven back by massed attacks until the line stood two miles from the railroad. It went no farther, for two French armies now arrived and the line was made safe. Four months later the Allies were able to drive back their opponents until the line was a safe distance from the railroad. But the battle itself came to an end with the German attacks of 6 April, which ended disastrously for the Germans. The armies in the salient were exhausted and it was necessary to let them rest while other armies took up the task of defeating the British.

Thus ended the operations which some persons have called the second battle of the Somme, but which is persistently referred to as the drive of 21 March. It was a surprise attack on a vast scale and in superior numbers. In the beginning the Germans threw 64 divisions against 32 British divisions. When it ended the Germans had used more than 80 and the British had used 49 divisions. In the beginning the Germans had used such concentrations, which their interior lines made possible, that they were in the ratio of three or four to one at the points of actual contact. As they marched forward they came to the region they had devastated in the preceding spring and found it harder to move their troops behind their own lines. The battle came to an end when the Germans in the salient had exhausted their strength and gone as far ahead of their heavy artillery as they dared go. They made an advance of 30 miles at the deepest point and announced the capture 70,000 prisoners and more than 1,000 guns.

On 23 March they began a long range bombardment of Paris with a battery of 8.4-inch guns, firing from a position 70 or more miles from the city. When the first shell arrived French experts were astonished at the feat. Some refused to believe that it was fired from a cannon, suggesting that it was dropped from an airplane flying so high that the machine was invisible. But the arrival of the shells at regular intervals of 20 minutes disproved that theory. Like the dropping of bombs on London and other English towns, the military effect was slight. It was meant for an attack on the French morale; but Parisians paid little attention. On Good Friday one of the shells struck the church of Saint Gervais in the older part of Paris, while the edifice was filled with worshippers, wrecking the building and killing 75 and wounding 90 of the worshippers. At a time when Germany was bending all her efforts to end the war with an early peace she chose this means of terrifying her foes into submission, and only goaded them into fury. Had she offered the world a first evidence of respect for humane feeling by suspending her bombardment on Good Friday, as she might well have done, the effect on the Parisians would have been much more favorable to the German cause. It was in the battles in front of Amiens that the British first used their small tanks, "whippets," companions to the small tanks of the French.

3. Reaching for the Channel Ports.— General Ludendorff did not mean to break off the battle for Amiens, but only to suspend it while the guns could be brought up and his soldiers could get some rest. In the interval he proposed to strike elsewhere. He knew that Haig had drawn strength from the lines near Ypres and

he assembled nine divisions for a sharp blow north of La Bassée. He hoped to do two things: break through to Béthune and on to Hazebrouck, connected by rail with Dunkirk, 25 miles away; and draw off strength from the Amiens front in anticipation of a renewal of the struggle there. He did not mean that the battle in this section should be a major engagement. He had enough troops to make this a powerful blow without weakening his strength in the newly-established Amiens salient. He overlooked the fact that he was now fighting not the British army merely but Foch's Allied army. The French reserves were now freely at the disposal of the British with no more delay than was necessary to bring them to the requisite point by the exterior line of communication. Had he been dealing with the British alone he would probably have used up their resrves in the north and reached his objective there.

On 9 April, just as the battle was receding before Amiens, an attack was made on a 12-mile front from La Bassée to the Lys, near Armentières. It came after a terrific bombardment with gas shells and high explosives, and there was a German advance of from three to four miles at the centre of the sector. Next the battle was extended to the area north of the Lys for eight miles with further gains on the whole region involved. On the north it reached the Wytschaete-Messines Ridge, which the British managed to hold after severe fighting. The battle had begun with nine German divisions in the attack, but it was extended on the second day until 16 were engaged. On the 4th Ludendorff had concluded that he had an opportunity to break through to the coast and began to put in his reserves without restraint. On this day six British divisions arrived behind the lines and were thrown into the battle as rapidly as they could be carried forward. They arrived none too soon; for the massed German attacks were being held back with difficulty.

General Haig now realized how serious the situation had become and made the most careful preparations to meet it. He drew in his lines from Passchendaele, thus shortening his lines and ridding himself of a sharp salient which it might be difficult to hold. To his men he sent a ringing order of the day 11 April, which shows in what situation was his army and in what spirit it was called upon to stand and fight. It ran as follows:

"Three weeks ago to-day the enemy began his terrific attacks against us on a fifty mile front. His objects are to separate us from the French, to take the Channel ports, and to destroy the British army. In spite of throwing already 106 divisions into the battle, and enduring the most reckless sacrifice of human life, he has made little progress toward his goals. We owe this to the determined fighting and self-sacrifice of our troops. Words fail me to express the admiration which I feel for the splendid resistance offered by all ranks of our army under the most trying circumstances.

"Many among us are now tired. To those I would say that, Victory will belong to the side that holds out longest. The French army is moving rapidly and in great force to our support. There is no other course open to us but to fight it out. Every position must be held to the last man. There must be no retirement. With our backs to the wall, and believing in the justice of our cause, each one of us must fight to the end. The safety of our homes and the freedom of mankind depend alike upon the conduct of each one of us at this critical moment."

The French began to arrive on the 16th. The five days' interval was a period of severe trial, the Germans slowly eating their way forward. On the 13th there was an all-day desperate struggle to hold Neuve Eglise and Wulverghem, keys to Mont Kemmel, a most important position, and success came but by a hair's breadth. Despite these efforts the Wytschaete-Messines ridge was taken and a long swoop was made to the west of its lower extremity. From Ypres to the southwest lies a series of hills about six miles north of the Lys River, making a barrier to Hazebrouck. The German attack had faced westward at first; but it turned northwestward after the fourth day, 12 April, and became a furious struggle to carry these hills. Out in front of the group stands Mont Kemmel which the enemy had to take if he advanced on Hazebrouck. He threw himself against it on 17 April in great strength and was repulsed with heavy losses. On the same day an attempt was made to break the lines north of Ypres. Ludendorff probably thought that the lines here would be weak through withdrawals for the southern areas, and he employed numbers that would have overwhelmed a weak line of defense. If he had taken Haig unawares and got behind the force in Ypres he might have made large captures of men and materials; but Haig was too careful to be caught napping. The northern line was held in strength and the attack only resulted in heavy German casualties.

The attack on the Lys-Ypres sector went through the same stages as the drive of 21 March. First came the furious onslaught against an enemy that could only fall back shattered but filled with the determination to hold on to the last; then a desperate fight against time in the expectation of French reinforcements; and at last the hardening of the line when the French arrived. On the Lys the first of these stages came on the 12th, the second lasted until the 18th, and the third lasted after a slight intermission, from the 25th to the 29th. In the second stage was the first attack on Mont Kemmel, which was a failure. The position was 200 feet higher than the surrounding hills and the Germans were very anxious to take it. On the 25th they made heavy concentrations and carried the hill. Despite their great efforts they could not go farther. The French, who held this part of the front, and the British, who were to the northeast, readjusted their lines and stood at bay. On the 29th they received a tremendous attack from 11 divisions so massed that there were from six to eight bayonets to the yard. By sheer weight it succeeded at first; but the French delivered a swift and powerful counterstroke which drove back the assailants in some places nearly a mile and checked their advance in all other places, so that on the whole they lost rather than gained on that day. General Ludendorff, as he says in his memoirs, decided that to continue his efforts to reach Hazebrouck was too costly and allowed the battle to come to an end.

When he opened the attack he expected it to be an action subsidiary to the fighting before Amiens. The success of the initial attack was so great that he could not resist the temptation to follow it up, and at last he threw so much energy into it that the Amiens battle suffered. On 23 April he tried to revive that action by opening an attack on the section of the line between the Somme and the Ancre. Four divisions were used and the town of Villers Bretonneux was seized; but in a brilliant counter-

stroke the British recovered all that was lost and took 1,000 prisoners. The battle was not reopened on this quarter. The German armies in the salient and on the Lys were too tired to continue the aggressive, and the fighting shifted to a field in which fresh troops were available.

4. **From the Aisne to Chateau-Thierry.**— The new scene of action was the line southeast of Laon where the second battle of the Aisne was fought. While the attack was delivered against strong positions, the Germans knew them to be held by troops exhausted in the recent fighting. Here we find repeated the purpose with which the Lys attack was begun. The new movement was inaugurated to draw Allied troops from Flanders, where it was proposed to renew the struggle as soon as opportunity offered. But as the initiative did not shift from Flanders to the Somme, it was not destined to shift back from the Aisne to Flanders.

The advance was begun on 27 May 1918. Forty divisions from the imperial crown prince's army were assembled with great secrecy in the line opposite the Aisne positions on a front of 30 miles, 25 of them in the first line of attack and 15 in the reserve line. The Allied line was held by seven divisions, four French and three British, with a thin supporting line in the rear. The British troops had seen heavy fighting in the March and April operations and were in this part of the battle-line for rest. The position was weakly held, not because Foch thought it too strong for attack, but because he was in dire need of troops in other sectors. He had a right to feel that Ludendorff would not drive southward into the region south of the Aisne, since he could not reach Paris that way without making a wide detour which would leave his flanks exposed to Foch's blows. In fact, Ludendorff admits that he had made no plans to sweep southward. His objective was the Vesle line and the railroad from Soissons to Rheims, an advance of from five to 10 miles. By going that far he expected to draw French troops from Flanders and so weaken the lines there that he could resume his progress toward the Channel. At one end of the objective was Rheims and at the other Soissons, and it was supposed that the French would do much to protect these important places.

The right centre of the attacking line was opposite the Chemins des Dames position, which was held by French troops. When the Germans advanced after a bombardment of three hours these troops were swept off their feet. Three divisions in their rear tried to form a line at the border of the Aisne but they, also, were overwhelmed and forced to retire so quickly that they could not destroy the bridges. At nightfall the Germans had gone forward to the Vesle and even crossed it. At its greatest depth the advance was 12 miles, which was more than had been made on any day in either of the two preceding drives. The British fought steadily and gave ground slowly, but the breach of the line on their left made retreat inevitable. The net result of the day's fighting was to establish a salient 16 miles broad at the base and 12 miles deep. Next day it was widened until the base was 25 miles and three miles added to the depth. The third day, 29 May, the Germans threw their strength against the western side of the salient and took Soissons, which the local leader had not tried to take at first, since it was not one of the original objectives. By this time Ludendorff was ready to enlarge his plans, and he had brought up fresh troops. Accordingly, on the 30th he let the army have its way and it rushed forward to the Marne, whose northern bank it took from a point three miles east of Dormans to a point four miles east of Chateau-Thierry, making a salient 30 miles deep and 35 miles wide at the base. It was too narrow for its depth, and Ludendorff lost no time in trying to widen it.

He first brought strong pressure against the western side, a forest region from Compiègne to Villers-Cotterets. On 31 May he had some success pushing westward from the inner side of the salient, and southward from the adjacent part of the old line. But already Foch's reserves were coming up and the advance was short. The attacks were pressed for several days, but without success. Within the same period strong efforts were made to take Rheims but they likewise failed. From the standpoint of military science the German divisions in the salient were in a trap, and they should withdraw if they could not widen the base of the salient.

The first attempts having failed Ludendorff took time and prepared a blow so heavy that he thought it could not fail. On 9 June he threw 15 divisions on the French lines defending the forests around Compiègne, advancing on the line from Montdidier to Noyon. Foch was ready for them and offered steady resistance. In two days' fighting the Germans gained six miles on a narrow front; but the Forest of Compiègne, running into the centre of the angle the line made before it turned south near Soissons, could not be taken and the western side of the salient stood firm. Ludendorff then projected an attack on the eastern buttress, but for that he made such elaborate preparations that the affair was a battle in itself. His venture on the Aisne, however, had led him into the Marne salient, and he was so involved that he had to relinquish, at least for a time, his plans for Flanders. The successes of the first three drives had made the German soldiers overconfident. In the offensive just ending they had taken 55,000 prisoners and 650 guns, and they had raced from river to river so rapidly that they concluded that the French army was used up. They were soon to have occasion to regret their hasty conclusion.

5. **The Beginning of German Defeat.**— We have seen that General Ludendorff tried in vain to widen the salient into which the ardor of his troops led him by attacking on its western side. His next move was to try to widen it on the east. Several sharp attacks were made on the lines in front of and east of Rheims, but they were all repulsed. Then he determined to make Rheims a part of his next major action. He proposed to cross the Marne southwest of this ancient city and move eastward on both banks while a powerful force attacking east of Rheims pressed the lines back and enabled the two forces to pinch out the Rheims salient. He expected to reach Epernay and Châlons and by seizing the railroads to Paris cut the vital line of supplies for the Allied forces in Lorraine and Alsace. In his previous drives during this year he had reached more than his immediate objectives. It seemed to him most probable that he would do the same thing in the drive he now projected. The German people, carried away by the ease with which their armies had reached

the Marne, believed the last effort before victory was at hand. They called the approaching battle the Friedensturm, the "stroke of victory."

Operations opened at midnight of 14 July. The artillery positions had been arranged by Colonel Bruchmuller, who had made this arm so efficient in the battles of 21 March, 9 April and 27 May. The effect of the opening cannonade was terrible in the whole area of the attack. The front trenches were destroyed by four o'clock in the morning, when the infantry advanced. They crossed the Marne from Fossoy to Chatillon and pushed back their opponents four miles on a sector 10 miles long. North of the river they advanced three miles on a 10-mile sector. But Rheims was not shaken. From a point eight miles southwest of it to another seven miles east of it the line remained as it was. Still farther east, where the shock was greater, the Germans gained slightly through the deliberate policy of General Gouraud, who held the opposite lines. He arranged his defenses in deep formation, his battle-line from two to four miles behind his outposts. When the attack came he withdrew from the front positions with all his advanced field guns, and the worst of the shock was spent before his main line was reached. By delivering prompt counter-attacks he prevented infiltration. His battle was conducted with remarkably slight losses, and it inflicted heavy casualties on his foes.

On 16 and 17 July the attacks were continued, the heaviest fighting being southwest of Rheims, on both banks of the Marne. On each day there was an advance of two miles on a narrow front, the result being that on the morning of the 18th the attack had gone about as far as it could be expected to go, while the eight divisions making it had suffered heavy losses and were exhausted. General Foch had received ample notice of what was coming from prisoners and deserters and had made preparations to meet it. Of the four great drives of the Germans in 1918 this was the least successful. It had apparently reached its limits when it was suddenly eclipsed by movements Foch made in another part of the field. It passed so quickly from the gasp of failure to the desperate fight to escape from the Marne salient that the observer is likely to forget how bad the German situation would have been even if there had been no counterstroke on the 18th.

Foch's preparations were carefully made. From a point opposite Soissons, in enemy hands, to Rheims, the lines of defense were held by the following armies: the 10th under Mangin, between the Aisne and Faverolles; the 6th under Degoutte, between Faverolles and Vaux, a mile west of Chateau-Thierry; the 5th under de Mitry, between Vaux and Dormans; and the 9th under Berthelot, from Dormans to Rheims, beyond which was the 4th under Gouraud. With the forces under Mangin were the 1st and 2d divisions of United States soldiers, with Degoutte was the 26th, and with de Mitry was the 3d with the 4th in support. The 42d, or "Rainbow Division" was with Gouraud, near Prunay, but it was about to be sent to Degoutte. Other American divisions were in reserve south of the Marne and were sent forward to de Mitry as the battle was being fought. (For the part played by the Americans see next section).

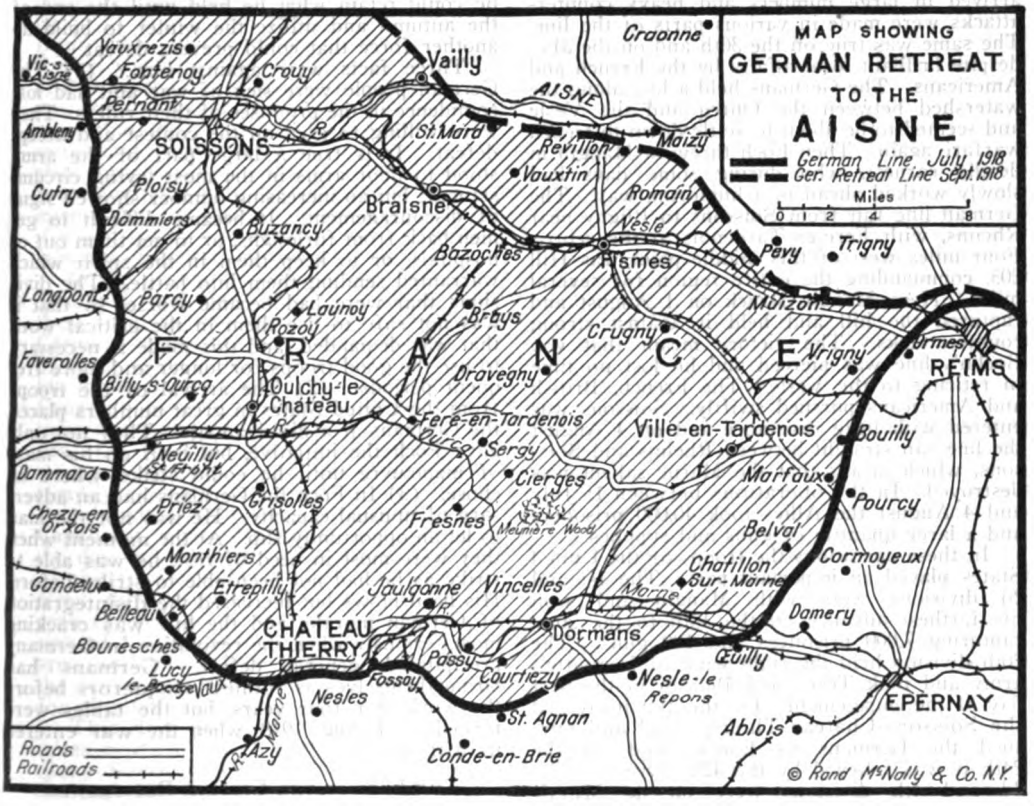
In thrusting themselves into the salient the Germans lost the advantages of that well-arranged system of roads that had favored them in most of their previous operations in France. One main highway led into the area, from Soissons to Chateau-Theirry, and it was well to the west of the centre of the salient. From this road, near its central point, a lateral branch ran off to the east near Oulchy-la-Ville, leading to Fere-en-Tardenois, seven miles to the eastward, and to Ville-la-Tardenois, 13 miles still further eastward. Besides the two roads, which were but one for 10 miles south of Soissons, the only means of travel in the salient were the parish roads, small and without system. Three miles north of Oulchy the Soissons road was only six miles from the eastward point of Foch's lines. If these six miles were eliminated it would be difficult to supply the forces in the southern part of the salient. At no point was this north and south road more than 14 miles from the French positions. It was tempting fate to leave their vital line of communication exposed to attack while they hammered away at objectives 20 miles distant; but the Germans believed the French reserves used up. They were preparing for a fifth great drive, this time on Paris direct, and thought that eight divisions, with six more in support, were enough to hold the line on the west side of the salient.

Foch's plan was to seize this vital road, but he went farther than that. The war had many times proved that no offensive was worth while after the defenders had time to bring up their reserves. All the gains hitherto made on the Western Front had been made by massing troops secretly and driving forward for a few days until the opposite side could hurry up enough men to stop the progress. Then it became too costly to try to go farther. Hitherto one great lunge had been followed by weeks of preparations for another, with the result that only a few such strokes could be made in a year. Foch decided to follow a modified form of the same tactics. Instead of putting all his energy into one crushing blow, he put it into several alternating blows, striking first at one place and then at another, and drawing the German reserves to each place attacked, but breaking off the attack before it reached the stage at which his losses were most serious. Thus, as long as he could keep the initiative he broke up the enemy's masses of reserves, which had already been reduced seriously by his four great drives. It was an excellent plan for the situation then at hand and for a leader of such brilliant action as Foch. It is doubtful if it would have succeeded earlier in the year, when the Germans were greatly superior in numbers. It could hardly have succeeded in any event if the soldiers of the United States had not been on hand in large numbers. Another new feature in Foch's method of fighting was the use of the quick counterattack to break up infiltration. It was impossible for the Germans to find the weak points in his line while they were forced to meet his charges.

Foch's hour of action arrived as the German drive of 14–17 July came to its period of stabilization. The decision was his. Pétain and Fayolle, whom he consulted as the French generals nearest in authority, were doubtful, but Haig gave his approval and took over additional trenches in order that French troops in

the Ypres sector might aid in the proposed attack.

The task of delivering the blow was allotted to Mangin and Degoutte. Their reinforcements were assembled secretly in the forest of Villers-Cotterets and in the wooded region south of it. At 4:30 in the morning of the 18th Mangin went forward without artillery preparation, his infantry was preceded by a large number of the small French tanks which the British called "whippets." At the same hour Degoutte attacked, in some places without preparation. The whole area involved was from Fontenoy to Belleau, a distance of 25 miles. The Germans were not prepared for the attack. They had come to the conclusion that the French were exhausted and they had left this flank in the Boehn commanding in the salient treated the attack as a local affair and ordered a counter-attack against Mangin, who received the blow firmly on the 19th and pushed forward a little, clinching his hold on the vital road. Then von Boehn came slowly to the conviction that the game was up and ordered a retreat which began at 9 P.M., 20 July. At the same time he concentrated his reserves against Mangin, expecting, as it seems, that the French would try to crush in the salient in the neighborhood of Soissons. But Foch's orders were for Mangin to hold his hand. Degoutte, de Mitry and Berthelot, however, were sent forward to press the retreating enemy. They gave him no relief. De Mitry and Berthelot pressed the retreating eight divisions to the Marne and held the south-



hands of weak or exhausted troops. The result was that the line crumbled at the first stroke. Mangin, who gave his arm full swing, drove forward from four to eight miles, reaching the vicinity of Soissons on the south and bringing the Chateau-Thierry road under his guns. Degoutte's advance was less extensive, but that was by design. He was at the pivot of the moving line and was held back for an advance of from two to four miles, which was easily achieved.

These events did not alarm the German High Command. So completely was it convinced of the impotence of the enemy at this point that it refused to believe that the attack of the 18th was a serious menace to the eight German divisions south of the Marne. Von ern bank of the river by the evening of the 20th. Next day Degoutte made a brilliant advance in the angle east and west of Chateau-Thierry, the 26th American division reaching Epieds, more than five miles from the starting point. At the same time American and French troops under de Mitry forced a crossing of the river, causing the Germans to abandon the town of Chateau-Thierry.

At this time the Germans were hastily trying to remove the vast quantities of materials they had taken to the region just north of the Marne in anticipation of a further advance. To protect them until they could be taken away it was necessary to stand and fight. As von Boehn showed fight Degoutte began to press on toward Fere-en-Tardenois. On the 25th he was

within three miles of that important centre of communication. Von Boehn realized that he could not hold back Degoutte's forces much longer and gave the order to retreat from the Marne, sacrificing a large amount of material which he had not been able to move.

Days of hard fighting followed from 25–31 July. Degoutte, de Mitry and Berthelot pressed the southern part of the salient in furious efforts to break it and force their way through. Von Boehn resisted with great firmness. His machine gunners served him well in those stark days and paid dearly for it with their lives. But they gave time for the main body of the army to fall back to the upper Ourcq with a line extending eastward through the hill south of the road that runs from Oulchy le Chateau to Ville-en-Tardenois. By the 29th reinforcements had arrived in large numbers and heavy counter-attacks were made in various parts of the line. The same was true on the 30th and on the 31st, despite brilliant local affairs by the French and Americans. The Germans held a line along the watershed between the Ourcq and the Vesle and seemed to be about to settle down to trench warfare again. Then Foch threw in Mangin in deadly earnest, who during some days had slowly worked ahead in a humdrum way. The German line ran from Soissons to Bligny near Rheims, with Fere-en-Tardenois at the centre. Four miles west of this middle point was Hill 205, commanding the entire region for several miles. Here Mangin struck on 1 August and captured the hill and held it against strong counterattacks. The victory meant that von Boehn's line was pierced and he lost no time in retiring to the Vesle. The French, British and Americans pursued swiftly. Soissons was entered with little resistance and on 4 August the line ran straight between Rheims and Soissons, which means that the Marne salient was destroyed. In the operations between 15 July and 4 August the Allies took 40,000 prisoners and a large quantity of guns and supplies.

In these operations the troops of the United States played an important part. The 1st and 2d divisions were with Mangin and won his farthest advance on the 18th to the 20th, capturing 7,000 prisoners and 100 guns. The 26th division held the right wing of Degoutte's army and took Torcy and Belleau in the first day of the engagement. On the 21st it crossed the Soissons-Chateau-Thierry road and pursued the Germans to Epieds, and on the 24th it was relieved by the 42d division. The 3d and 4th divisions were on de Mitry's left and crossed the Marne when Degoutte's attack uncovered Chateau-Thierry. They took position on the right of the 26th and pressed the retreating enemy. In the fighting on the Ourcq the Americans took notable parts. The 42d division took and held Sergy, although the place changed hands five times before the Prussians who contended for it were finally beaten off. The division then met and defeated in a fierce hand-to-hand conflict the celebrated fourth Prussian Guard division, which was sent to drive the Americans into the Ourcq. The 32d division fought with equal distinction in Meunière Wood and drove its enemy before it, though greatly outnumbered. American divisions followed the enemy to the Vesle and seized Fismes before the Germans could get to it. They then crossed the Vesle and established themselves in a position that served for a jumping-off place in further operations.

When the Germans retreated from the Marne in 1914 they outnumbered their opponents and had better equipment. When they retreated in 1918 they were in weaker numbers and had lost the superiority in equipment. Much fighting had worn down their strength and their morale was undermined. Hardly a man in the army that did not realize that Germany could no longer hope to win the war. The enterprise which started so well had ended in gloom for the Teutons. Von Boehn had used up all the reserves of the group of armies commanded by the imperial crown prince and had drawn on the reserves of other groups. Ludendorff had but 26 reserve divisions and gave over all thought of maintaining the offensive. But he believed he could retain what he held until the end of the autumn and utilize the winter to build up another force that could prevent defeat.

Three facts were against him: (1) The German people were sick of war and had lost confidence in the promises of their rulers. They were willing to give up the contest and accept defeat. It is true a large part of the army stood to their arms in the most trying circumstances; but an increasing number showed signs of discouragement. It became difficult to get men back from furloughs, or to get them out of hospitals, or to keep them in the spirit which warranted sending them into battle. The divisions that were bad became worse, so that it was not safe to use them in the critical work that was demanded, and this made it necessary to use the good troops for longer and more frequent periods. (2) The arrival of the troops from the United States in great numbers placed the Germans at a disadvantage. They not only gave Foch the initiative, but built up his mass of manœuvre until he could strike where he chose. (3) In Foch the Germans had an adversary of unusual capacity. He was not the man to let an opportunity slip. At the moment when they were most in need of rest, he was able to strike as he had not been able to strike before. His hard blows but increased the disintegration of German morale, and the line was cracking most seriously when the revolution in Germany precipitated general defeat. Germans had borne themselves as ruthless conquerors before the world for four years, but the tables were turned on 1 Aug. 1918, when the war entered its fifth year.

The Last of the German Resistance.

1. Weakening the German Front.—At the Vesle Foch, pursuing the retreating Germans who had been beaten back out of the Marne salient, decided to stay his hand. It was not his plan to attack when the enemy's line hardened, but to arrest the battle and strike elsewhere. Having the initiative he was able to choose his course, and his opponents were forced to send reserves hither and thither as he struck. Meanwhile their unprepared sectors were pounded into jelly, their fighting men were used up, and their will to war was undermined on seeing themselves defeated in one place after another. From 8 Aug. to 26 Sept. 1918 this process went on. Blow after blow softened the German line. When it was sufficiently weakened Foch would mass his blows at important points and drive through for critical positions.

The first of these softening blows was launched on 8 August, east of Amiens, on a 14-mile front, at the place where the Germans had approached nearest to the Paris-Amiens Railroad. The attacking force was composed of British and French troops under the temporary command of General Haig. The British portion was composed of Canadians and Australians brought for the purpose from the northern section of the British line. The French, who held a three-mile front on the right, were under the command of General Débeney. Tanks, most of them "whippets," had been assembled to the number of 400, and the ground, as it happened, was dry and without enclosure, which just suited tank operations. Everything else was favorable, especially the atmospheric conditions, for a heavy fog, like that which hung over the Saint Quentin front on the morning of 21 March 1918, now covered the Amiens front when the Canadians, Australians and French went forward at dawn on the morning of 8 August. By using skilful deceptive measures the impression had been made on the Germans that the attack would fall on the Ypres sector, and the movement at Amiens was a complete surprise. It opened with a bombardment of four minutes which, says Mr. Buchan, was "so intense that the enemy's defenses disappeared as if wiped out by a sponge." Then the tanks went forward, followed by the infantry.

In the centre the German lines cracked and dissolved, and the attackers easily penetrated them from four to seven miles. The surprised Germans were captured in large numbers, some of them while at breakfast, others while working in the harvest fields behind the lines. The Canadian cavalry got behind the enemy's positions and captured a railroad train near Chaulnes. On the right flank the Frenchmen found stronger opposition but they fought their way steadily forward and stood by the side of the British when night fell. On the left flank the Canadians went forward at first, but later in the day the Germans rallied and recovered part of the territory they had lost in this quarter. Next day, however, they renewed the attack with the help of a regiment from the 33d division of United States troops, recovered the lost area, and took a little more. At the same time the centre and right flank were carried forward for about three miles.

This deep dent in the German line was five miles north of the important town of Montdidier. Southeast of it was the French army of General Humbert. He saw the opportunity to deal a telling blow and seized it. On 9 August, while the British were advancing to the north, he threw his army against the line in front of him, without waiting for reinforcements. Taken by surprise the defenders made less than the usual resistance. In a day and a half Humbert advanced eight miles, cut the road to Roye, and thus forced the surrender of the Montdidier garrison, for whom this road was the only available way of retreat. With it was taken a large quantity of supplies. For the next five days the Allies ate into the German defenses, until on the 15th the British were but two miles from Chaulnes and the French four from Roye, both important centres of communication. General Humbert had also taken the ridge southwest of Lassigny and overlooked a wide belt of the enemy's lands, thus forcing their further retreat.

In one week's fighting the Germans lost 30,000 prisoners and probably suffered an equal loss in casualties, an actual shrinkage of their force by five divisions. Amiens was safe and the Germans were not within 15 miles of the Paris Railroad. It was estimated that Ludendorff was left with but 16 fresh divisions in reserve on the Western Front. With such reduced reserves he could not hope to resume the offensive. In these operations the German soldier showed a notable lowering of his fighting spirit, especially the machine-gun units, who manifested less willingness to hold forlorn positions to the last. In the ease with which the Allies penetrated his lines on 8 August, says Ludendorff, he saw the first indication that the German army was beaten.

By 15 August Foch was convinced that it would not be wise to press the enemy further in the Amiens sector and he turned to another area. East of the Oise was General Mangin, who had played such an important part in the fighting on the western side of the Marne salient. On 18 August Foch sent him forward for a mile on a 10-mile front. Von Boehn, who commanded the Germans in this fighting, in dire need of men, chose to consider Mangin's attack a feint and drew back to his battle-line. On the 19th Mangin attacked on a larger front and ran forward for four miles on the eastern bank of the Oise. On the 20th he advanced three miles on a 16-mile front facing northeast toward the Ailette and taking 8,000 prisoners and 200 guns. By this time von Boehn had come to realize the seriousness of the attack and sent three of his precious reserve divisions. Foch, following his plan, ordered Mangin to stay his hand.

He was ready to spring an attack elsewhere. The place selected was the sector in front of Bapaume, where the British had fought the battle of the Somme in July 1916. Here stood the British 3d Army under the immediate command of General Byng, and they were ordered to attack on a nine-mile front on 21 August. Heavy fogs again hung over the field of battle and shielded the assailants. Tanks were also present in large numbers. The result was that the German lines were broken and a gain of from two to three miles was made. Next day an attack was made a few miles to the south, resulting in the capture of Albert.

By this time it was evident that the Germans were seeking to withdraw to their Siegfried line, which they had occupied before the 21 March drive. Foch quickly realized their intention and ordered that the blows be redoubled. The Oise divided the great angle of the battle-line, and the contest now fell on each side of it, the French fighting to the south and a few miles to the north of the river and beyond them, in the north, the British. Each day saw some advance. By 1 September the British had pressed on 14 miles east of Albert. They had also carried the fight into the Arras sector, where Bapaume was taken by New Zealanders with a great quantity of military supplies and by the end of the month they stood fairly against the Drocourt-Quéant switch-line. On 1 September Péronne was captured by Australians. The French area saw but little fighting during these last days in August, it being Foch's plan that the region immediately on the

Oise should advance slowly. It was well that it was so, for the fighting of June and July had severely taxed the French soldiers, whereas the British in the north, in general, had been unemployed since the spring. Their manner of fighting showed their excellent condition. By 1 September they had only warmed to the contest, which was carried on in one blow after another, the Germans recoiling and rarely attempting a counterstroke. In fact, Ludendorff at this time had no other thought than to get safely behind his Siegfried line. He was pressed so closely that he found it very hard to fall back at all, and the daily reverses with large captures of prisoners showed him how perilous it was to stay at that place. In the campaign north of the Somme, near Bapaume and Arras, lasting 18 days, the British took 50,000 prisoners and 470 guns. Four German divisions were thus drawn into the British prison camps and as many more were accounted for in the casualty lists. On the last of the days counted, that is, on 2 September, Canadian troops broke through the Drocourt-Quéant switch-line on a six-mile section and carried the Germans back three miles to the Canal du Nord, which was but seven miles from Cambrai. South of the switch, however, the Siegfried, or Hindenburg, line still held and it was to stand for many days yet.

The reader will note that many of the critical positions taken in these operations were carried by Colonial troops, from Canada, Australia and New Zealand. That these men should have been so often in the posts of greatest hardship is witness to their hardy fighting quality. It does not mean, however, that there was any weakening of the fighting capacity of the men from the United Kingdom. On every field they proved their courage and devotion.

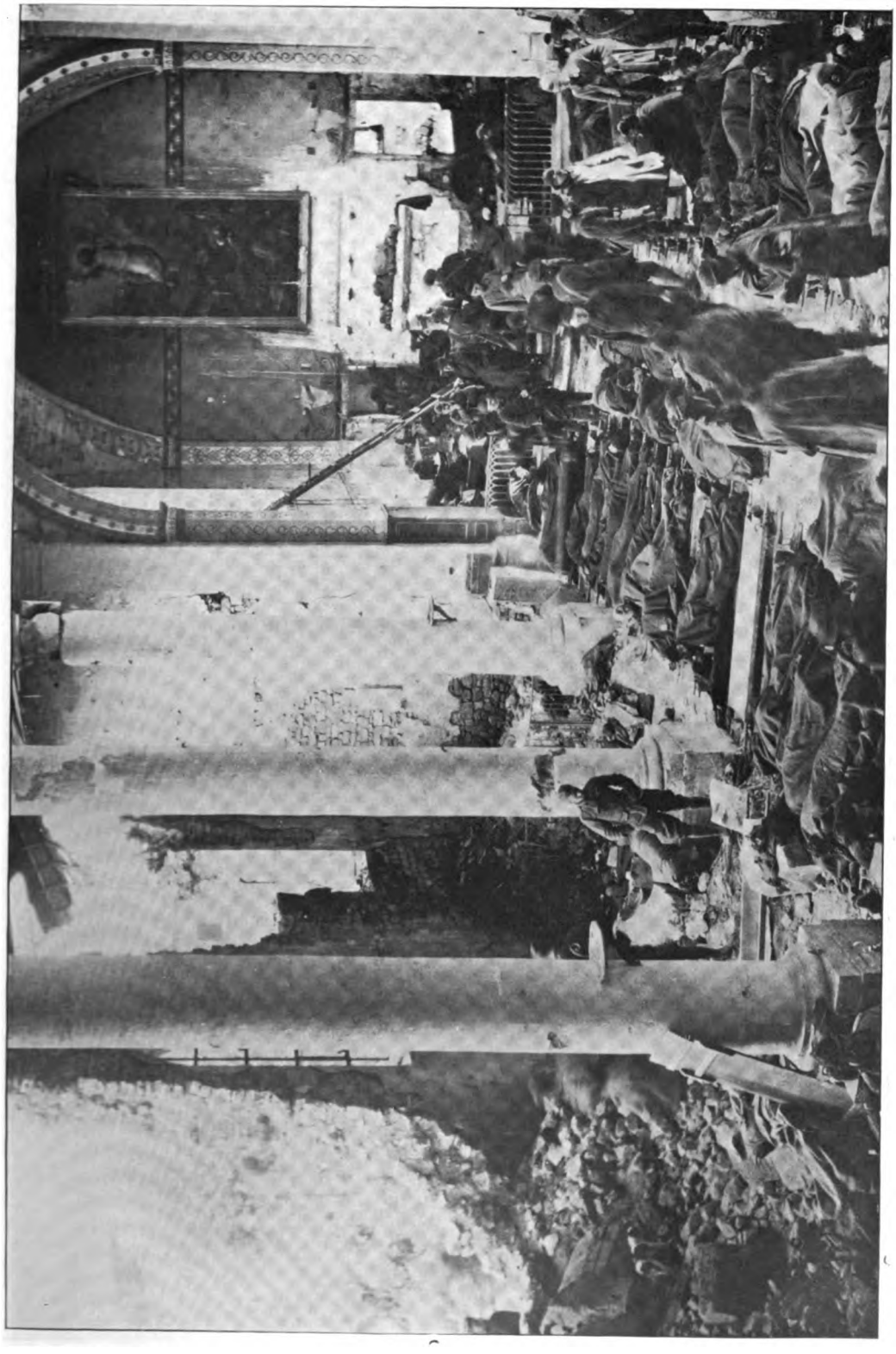
The Drocourt-Quéant switch-line was broken on 2 September. The water-line along the Canal du Nord held tight for awhile and the British did not press it hard. They contented themselves with forcing the Germans back on their Siegfried line. At the same time the French to the southward, Generals Débeney, Humbert and Mangin, had worked their way forward as far as they could until all the ground taken by the Germans in their offensives of 1918 had been recovered. Foch was wearing down his opponent's strength while conserving his own. Since the beginning of the Allies' attacks on 18 July, when he took the initiative, he had inflicted losses of 500,000, and the arrival of the Americans on the line had given him an equal number of fresh troops. In comparison with Ludendorff, therefore, his relation to the enemy had improved by a million men, minus the number by which the German was strengthened by those he received from the new class and from the men who were sent back to the army from the hospitals. It is probable, however, that Foch received nearly as many men from these two sources as the Germans. It is certain that he grew relatively stronger as his opponent used up his reserves under Foch's well devised plan of softening the line without making a great effort to break through. By 26 September, although he had shortened his line and thus saved more than 30 divisions, Ludendorff was still in a precarious position. He could only hold his own by rapidly reinforcing points attacked, exposing other points from which he took the reinforcements, so that they were continually smitten by the watchful Foch.

It was at this time that the United States troops under General Pershing launched their first independent attack against the Germans, driving them from the Saint Mihiel salient on 12 September in a well-planned and well-executed action. Fuller description of the enterprise belongs elsewhere in this sketch; but it is well to remember that the reduction of the salient not only showed friends and enemies what kind of soldiers the men of the new army were, but it actually removed a menace to the Allied position around Verdun and cleared the way for later operations, either up the Meuse Valley against Sedan or across country to the northeast against Metz. To threaten either of these important points was a serious thing in the fighting.

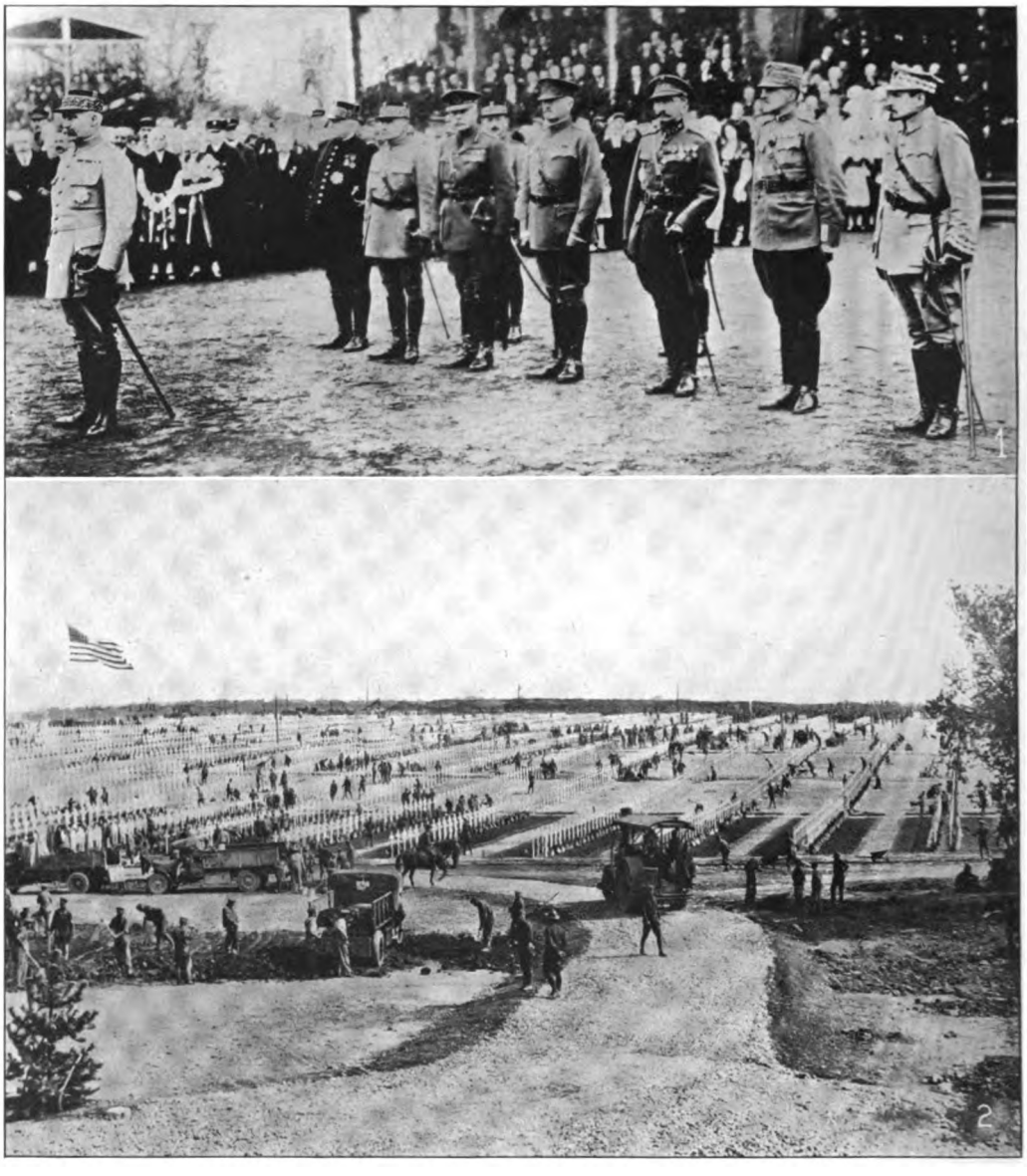
The significance of these weeks of continuous blows was that they cleared the way for greater strokes to come. They interfered with Ludendorff's orderly withdrawal to strong positions, they weakened the morale of his army, they reduced his fighting strength and they cut off the last projecting salient that protected the approaches to his vital line of communication at Sedan. As preparations for the final stage of the war they derived additional significance from the progress of events on the Eastern Front.

It was 15 September that Gen. Franchet d'Esperey began the campaign that resulted in an offer of surrender by Bulgaria on the 26th. It was on 19 September that General Allenby opened the campaign in Syria by which he destroyed the Turkish armies under Gen. Liman von Sanders, took 60,000 prisoners, occupied the ancient city of Damascus on 1 October and thus reduced the government at Constantinople to the point at which its surrender was only a question of days. The effect of these disasters on the spirits of the German soldiers in France was striking. The least enlightened of them could not fail to see that with Bulgaria and Turkey out of the war Austria would be forced to capitulate and that done the end could not be deferred many weeks.

2. The United States and the War.—When the war began President Wilson, following a custom established by Washington in 1793, issued a proclamation of neutrality and the vast majority of the American people supported his action. It was plain that the conflict grew out of the ambitions and rivalries of European states, running back through many international congresses, matters with which the people of the western world had nothing to do. In trying to carry out a neutral policy President Wilson, however, soon aroused opposition from each of the belligerents. The broad interpretation Great Britain and France gave to the rules of international law concerning contraband, blockade and the right to seize goods bound to the ports of the northern neutral nations of Europe was firmly contested by the Washington government. The protests were not effective and claims for damages grew daily in numbers and sum totals against the day when an international tribunal would be asked to pass upon them. At the same time Germany gave grounds of offense by conducting a complex system of espionage and propaganda within the United



Clearing station for the wounded in ruined church at Neuville



1 Commanders of the Allied Armies. Pétain (in front). (Left to right) Joffre, Foch, Haig, Pershing, Gillain (Belgium), Albrecht (Italy), Haller (Poland). Photograph taken 8 Dec. 1918 at the Ceremony of the Presentation of the Baton of Marshal of France to General Pétain.

2 An American Cemetery at Romagne, near the Argonne

States, by sending out supply ships from American ports to succor her cruisers at sea, and by using her submarines against Allied merchantmen in such a way that she slew American citizens who were conducting themselves within the provisions of international law. The destruction of the *Lusitania*, a British transatlantic liner, on 7 May 1915, by which 102 American citizens, including women and children, were killed, was the most striking instance of this series of complaints. Against the second and third kinds of wrongs the government protested to the authorities at Berlin; but as to the first, espionage and propaganda, it was difficult to cite concrete actions on which to base formal complaints. But the evidence of interference were numerous, and it is probable that they contributed little less than the submarine policy to the state of irritation that carried the American people into the war.

In the first months of the war the American attitude was accepted in London and Paris as the natural course for the United States to follow. But as the magnitude of the conflict came home to the people of the Entente nations they began to turn their eyes to the United States. They had come to realize that it would tax their best energies to defeat Germany and they wished the help of the western republic. By this time it was clear that Germany was fighting for world power. If she was successful she would impose crippling terms on her European opponents and gather strength for a new and more ambitious contest. As to liberal government, it would probably pass into a state of subserviency if a victorious German military autocracy placed its heel on the necks of the self-governing peoples of Europe. In view of these reflections the sorely pressed people of France and Great Britain easily came to believe that the United States had as great an interest in the defeat of Germany as any other free nation. British and French blood, said they, was being spilled as much for liberty on the Mississippi as on the Thames; and they added that it was a discredit for the Americans to leave other people to win their battles for them. By the end of 1916 many Americans had come to hold this opinion. It was their war as much as Europe's, they thought, and they wished their government to take its place by the side of those who fought to suppress liberal government.

In the mind of President Wilson another motive was forming, broader and more idealistic. To defeat one dangerous nation only to turn the world over to the play of forces which would soon bring up another who in turn would have to be defeated was a cheerless prospect to him, as to many another man on each side of the Atlantic. It became his purpose to try to get the world to adopt a league of nations to enforce peace by co-operation, and he announced in several speeches that by virtue of the part neutrals would have to take in readjusting world affairs after the war, the United States would have to take a part in keeping with their strength in arranging those parts of the peace which had to do with permanent international relations. When Germany issued her ruthless submarine decree on 31 Jan. 1917, he severed diplomatic relations and announced that the execution of the decree would be an act of war, which the nation must repel with force. Thus the United States went into the war; but President Wilson, in his speech to Congress, 2 April 1917, declared that the object of the fighting was to make the world safe for democracy and to establish a system under which the horrors of war on a grand scale would be abolished. There is nothing in the American constitution giving the President the authority to declare the object for which the nation fights; but the warm approval given his speech of 2 April by political friend and foe seems to indicate that his ideas were approved by the people of the United States.

The accession of the powerful western republic gave new courage to the exhausted states of the Entente alliance. Germany discounted its significance, saying that money and supplies might be furnished to her enemies, but that it was physically impossible for the Americans to send a great army across the Atlantic. The assertion seemed but too true to many a Frenchman; and Joffre, in Washington, in May 1917, urged that American troops, if only a division, be sent to France at once to reassure the French people and show them that American troops would fight by the side of the French *poilus*. Thus it was that the first American division was sent to France in June and July 1917, and General Pershing was made commander of all the forces sent by his government to fight in France.

During the remainder of the year 1917, active preparations proceeded for the transmission of American troops to France. Engineering forces went over in large numbers to construct depots for supplies, docks for unloading, and railroad tracks for the accommodation of the large number of locomotive and freight cars that were needed by an army of 2,000,000. Other pioneer divisions followed. By the end of the year 195,495 troops had been embarked, and at that time they were going at the rate of 48,000 a month. When the Germans opened the drive of 21 March it became evident that the success of the Allies demanded the arrival of much greater numbers of Americans, and Great Britain limited her own supplies of food in order to place ships at the disposal of the United States. Thus it was possible to transport 244,345 men in May, 297,000 in July and 283,000 in August. When the armistice was signed on 11 November the United States had embarked 2,045,169 men for service in the World War. About half of this number were available for service under General Foch when he opened his heavy drives on the German lines in August 1918.

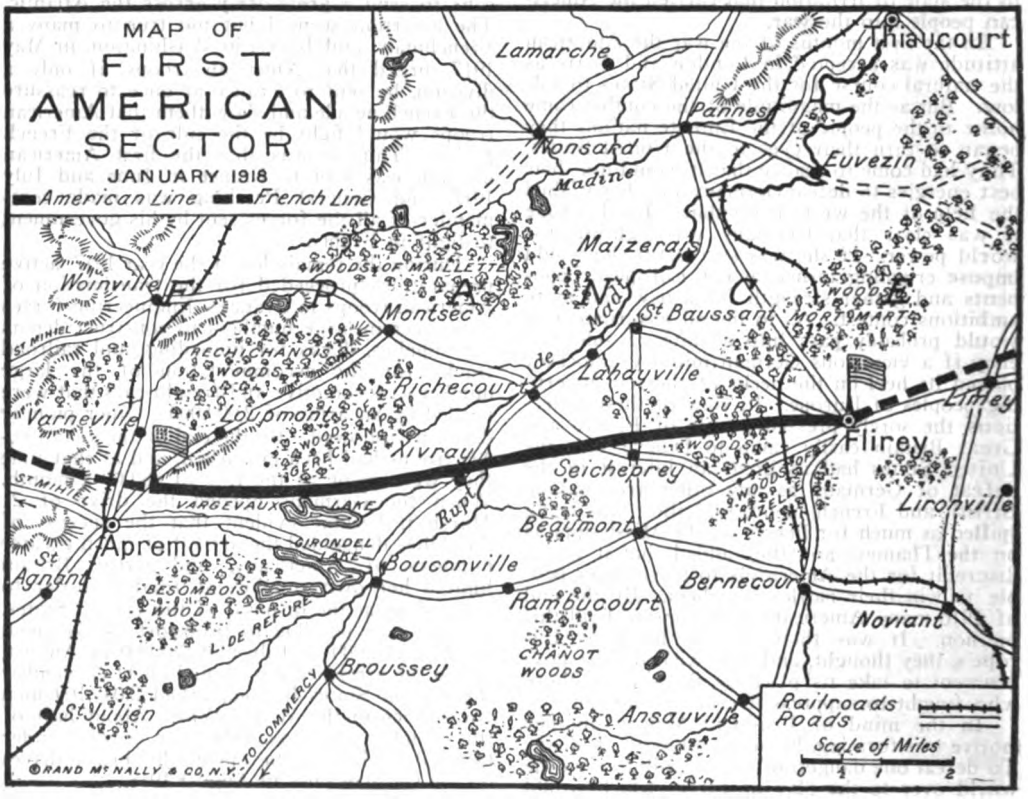
To support this large number of men in France demanded the utmost exertion on the part of the United States, and the system of communications and depots that was created was one of the notable achievements of their part in the war. When they came into the field they found the British were using the channel ports of France to the limit of capacity. If the Americans could have used them also it would have produced great confusion in transportation to have given them control of railroads crossing the areas behind the British lines. It was logical for them to take over Atlantic ports south of the channel, and four were assigned them: Brest, Saint Nazaire, La Pallice and Bordeaux. With a lavish expenditure of money and energy docks were built, railroad sidings were constructed, warehouses were

erected, bakeries and other manufacturing plants that ministered to the needs of an army were established, and camps of instruction for the air service and for other arms were established. The American Service of Supply represented American business energy at its best, operating as it did with unlimited funds at its disposal. That it used a vast amount of money was evident to all; but it obtained the desired results in an astonishingly brief time.

Great doubt was felt in friendly as well as in hostile countries about the possibility of training the Americans into an efficient army. It was not until the battle of the Somme, two years after the war began, that the British could be said to have converted their untrained men into modern soldiers. Could anything better be expected from the men of the United States? The doubters did not realize that the Americans had the advantage of knowing all the mistakes of the British. Also, they showed a great willingness to learn how the trick was done. When they arrived in France they made no objection to serving by battalions under French and British officers. American brigades were placed by the side of British brigades in the trenches. This docility in instruction made a deep impression on the European soldier, who was ever jealous of his nationalism. Under these conditions officers and privates learned the game of war thoroughly and waited patiently for the time when they should act as a distinct army with a distinct area of operations and distinct objectives.

When the German offensive of 21 March 1918 broke on the British lines in front of Cambrai and Saint Quentin, four American divisions in France, numbering about 28,000 men each, were in such an advanced state of training that they could be used as combat troops.

On 28 March General Foch was made head of all the armies of the Entente in France. On the same day General Pershing visited him to place at his disposal the entire American force in France. The words he used in making the tender are worthy of repetition. "I come to say to you," he said addressing General Foch, "that the American people would hold it a great honor for our troops were they engaged in the present battle. I ask it of you in my name and in that of the American people. There is at this moment no other question than that of fighting. Infantry, artillery, aviation — all that we have are yours to dispose of as you will. Others are coming which are as numerous as will be necessary. I have come to say to you that the American people would be proud to be engaged in the greatest battle in history." The time was opportune, and Pershing's utterance, widely reported, enthused the tired and doubtful people of France and Britain. At that time the speed with which the Americans could get into the battle was the supreme question. Germany was pressing for a decision before the weight of American help could be felt against her. The French and British were grimly set to hold on until the American troops could take

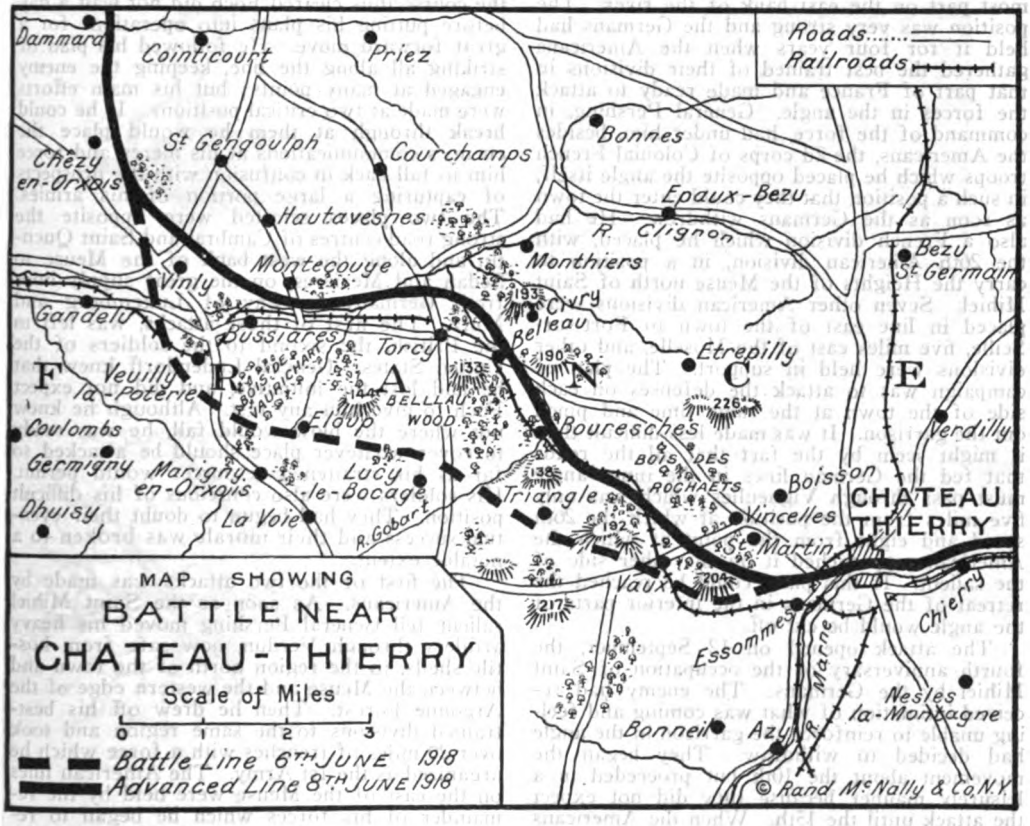


some of the pressure off their lines and enable them to turn the tide of battle.

A few days later Foch ordered the 1st American division into the trenches in front of Cantigny, near Montdidier, and here on 28 May the division, under the command of Major-General Bullard, charged the enemy's trenches and took the town of Cantigny in a well-fought engagement. The manner in which it was carried through attracted attention and gave great satisfaction to the large number of people who were waiting to see how the Americans would fight. The London *Evening News* expressed the common feeling when it said: "Bravo, the Young Americans! Nothing in to-day's battle narrative from the front is more exhilarating than the account of their fight at Cantigny. It was clean-cut from beginning to end."

Already the third German drive had begun, breaking the Aisne front and sweeping down to the Marne. On 30 May two other American divisions, the 2d and the 3d were thrown against this tide, meeting it at Chateau-Thierry and a little northwest and east of it. They went into action at once, taking over the lines from the exhausted Frenchmen who had been fighting with little rest for five days as they fell back. Here again the Americans proved satisfactory. The advance of the Germans was checked and on 6 June a portion of the Americans, a brigade of the United States marines, began a six-day attack on Belleau Woods. It was undertaken without adequate artillery support, with the result that the marines suffered heavily. Finally guns were brought up in great numbers and the woods were raked thoroughly. Then the marines went forward and took the position. The battle of Belleau Woods was a test of courage well met. It became a standard for the endurance of the army.

On 15 July the Germans opened their fourth drive, crossing the Marne from Dormans to a point west of Jaulgonne, a distance of 15 miles. On the right flank of this attack they encountered the 3d American division, who, pressed back, quickly rallied and drove the enemy across the river on their immediate front with heavy losses and then gave aid to the French on their right. Here they held their own for five days, until the heavy attack of Foch on the west side of the Marne salient caused the withdrawal of the troops south of the Marne, when they followed and took part in the pursuit which drove the Germans out of the salient.



Three American divisions took part in the operations of the 18th, by which Foch seized the initiative and crushed in the western side of the salient, from Fontenoy, north of the Aisne, to Vaux, northwest of Chateau-Thierry. The parts taken by the 1st, 2d and 26th divisions in that attack have already been described, as well as the fighting of the 3d, 4th, 42d, and other divisions in the southern part of the great salient in the last 10 days in July (see page 344). General Pershing proved himself a hard hitter. He threw in one division after another, giving them their first taste of

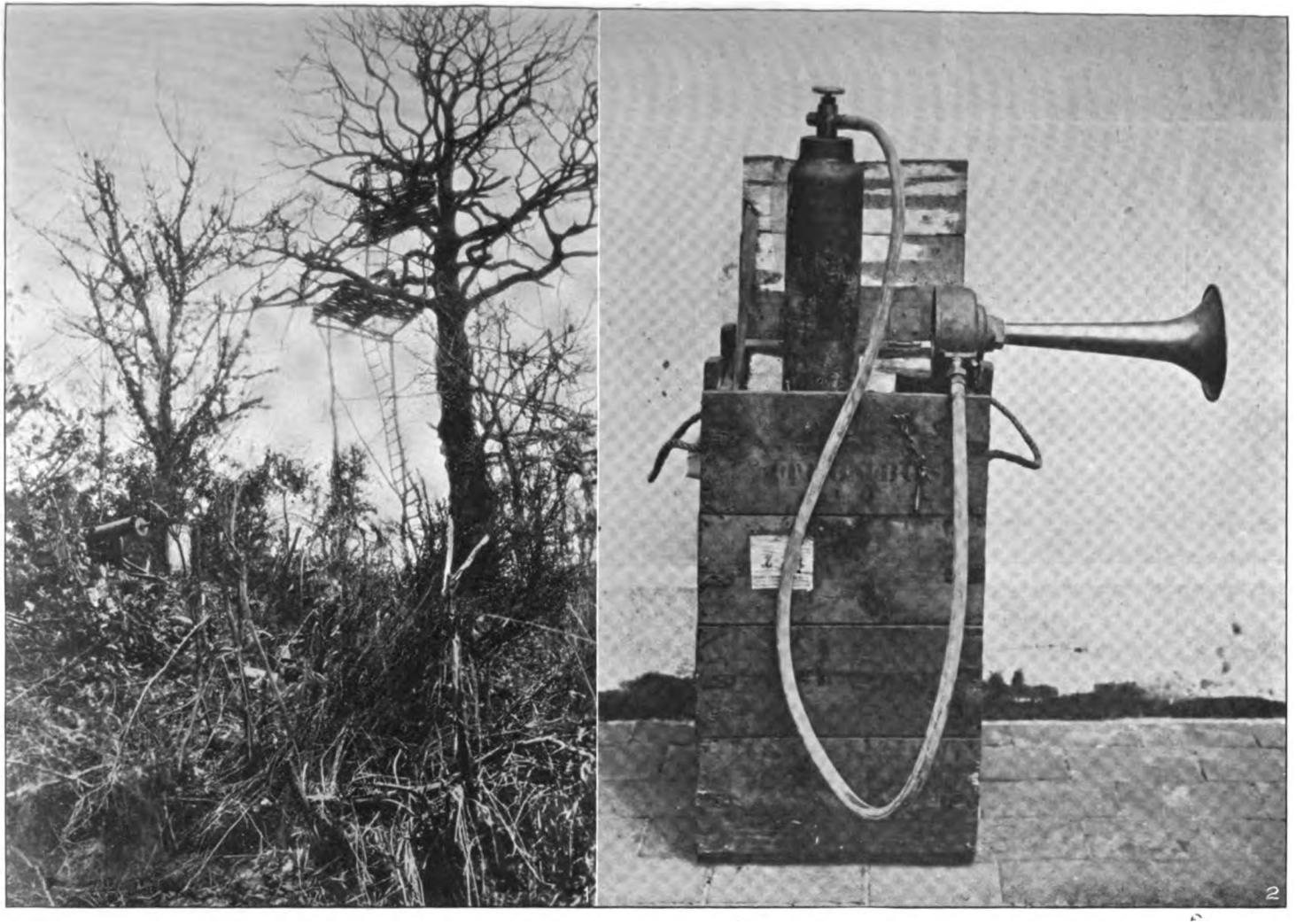
fighting on a large scale. They showed that they were to be depended on, meeting some of the best German troops on equal ground. These days placed the new American army beyond the stage of tutelage. They proved its reliability, and henceforth it was placed on the footing of military equality with the other armies enlisted in the task of defeating Germany.

By the first of September the American divisions that had followed the retreating Germans were being withdrawn, in pursuance of a plan that was made with the approval of Marshal Foch for a distinctly American attack on the Germans. The point selected was at Saint Mihiel, where the battle-line passing westerly from Pont-à-Mousson reached the Meuse and bent sharply northward until it passed around the defenses of Verdun, keeping for the most part on the east bank of the river. The position was very strong and the Germans had held it for four years when the Americans gathered the best trained of their divisions in that part of France and made ready to attack the forces in the angle. General Pershing, in command of the force, had under him, besides the Americans, the 2d corps of Colonial French troops which he placed opposite the angle itself, in such a position that they could enter the town as soon as the Germans withdrew. He had also a French division which he placed, with the 26th American division, in a position to carry the Heights of the Meuse north of Saint Mihiel. Seven other American divisions were placed in line east of the town to Port-sur-Seille, five miles east of the Moselle, and other divisions were held in support. The plan of campaign was to attack the defenses on each side of the town at the same time and pinch out the garrison. It was made less difficult than it might seem by the fact that all the roads that fed the German lines in the inner angle must pass through Vigneulles which was only five miles from the position at which the 26th stood and eight from the point at which the Americans approached it on the other side of the salient. If this place could be reached the retreat of the Germans in the interior parts of the angle would be cut off.

The attack opened on 12 September, the fourth anniversary of the occupation of Saint Mihiel by the Germans. The enemy had received intimation of what was coming and feeling unable to reinforce the garrison in the angle had decided to withdraw. They began the movement about the 10th but proceeded in a leisurely manner because they did not expect the attack until the 15th. When the Americans advanced, the work of evacuation had not progressed very far, but the lines of defense were in an unstable condition. They yielded easily to the Americans who attained all their objective of the first day of the engagement. Late in the evening they learned that the Germans were escaping out of Saint Mihiel, and two regiments set out for Vigneulles in the night. They reached the place in the early morning and bagged a large number of the enemy who had gone far enough to feel secure. The Americans took more than 16,000 prisoners and 443 guns. They readjusted their lines across the Woevre Plain in nearly a straight line from the northern defenses of Verdun to the Moselle River near Pont-à-Mousson. In some places it was within 20 miles of Metz and some persons thought it only remained to move on that position. But Saint Mihiel was not directly a step toward Metz. The position as held by the Germans was an annoying salient thrust forward into the Allied territory and prevented an advance against Sedan, the truly vital part of the German lines in this part of France. It would have been impossible for the Americans to go forward up the Meuse with Saint Mihiel in German hands. Later we shall see how that movement was conducted.

3. Breaking a Weakened Line.—The fighting just described by the Allied armies in August and September accomplished two important things. It softened the German resistance and prepared the way for a break through, and it removed the Saint Mihiel salient which was an obstacle in the way of further operations. With the course thus cleared Foch did not wait a day before putting his plans into operations for a great forward move. He followed his plan of striking all along the line, keeping the enemy engaged at many points; but his main efforts were made at two critical positions. If he could break through at them he would place the enemy's communications at his mercy and force him to fall back in confusion with the prospects of capturing a large portion of his armies. The two places selected were opposite the strong road centres of Cambrai and Saint Quentin and along the west bank of the Meuse to Sedan and Mezières, on the great supply lines from Germany by way of Luxemburg and Metz. The first of these attacks, was left to the British, the second to the soldiers of the United States. General Ludendorff knew that he had lost the initiative, and did not expect Foch to give him any rest. Although he knew not where the blow would fall, he was ready to cover whatever place should be attacked so far as his straitened resources would permit. His soldiers were also conscious of his difficult position. They had begun to doubt their eventual success and their morale was broken to a notable extent.

The first of the two attacks was made by the Americans. As soon as the Saint Mihiel salient fell General Pershing moved his heavy artillery through Verdun, now safe from hostile shells, to the region north of the town and between the Meuse and the western edge of the Argonne Forest. Then he drew off his best-trained divisions to the same region and took over 20 miles of trenches with a force which he organized as the 1st Army. The American lines on the east of the Meuse were held by the remainder of his forces which he began to reorganize into a 2d Army. At this time the 2d Army held the line from Port-sur-Seille to the Meuse, a distance of 42 miles. The 1st Army held the line from the Meuse to Vienne-le-Chateau, a distance of 23 miles, the last eight of them being through the Argonne Forest. To the west of the Americans was the French army under General Gouraud, holding the sector between the Argonne and Rheims. Foch's orders were for Pershing and Gouraud to advance simultaneously, but the forces under the former were looked upon as the spearhead of the movement. On 25 September both commanders were ready and a heavy cannonade was opened. It was especially intense in the sector of the 2d American Army, the design being to give the enemy the impression



1 Observation post and machine-gun nest near Grande Pré

2 Horn operated by compressed air used to give warning of a gas attack

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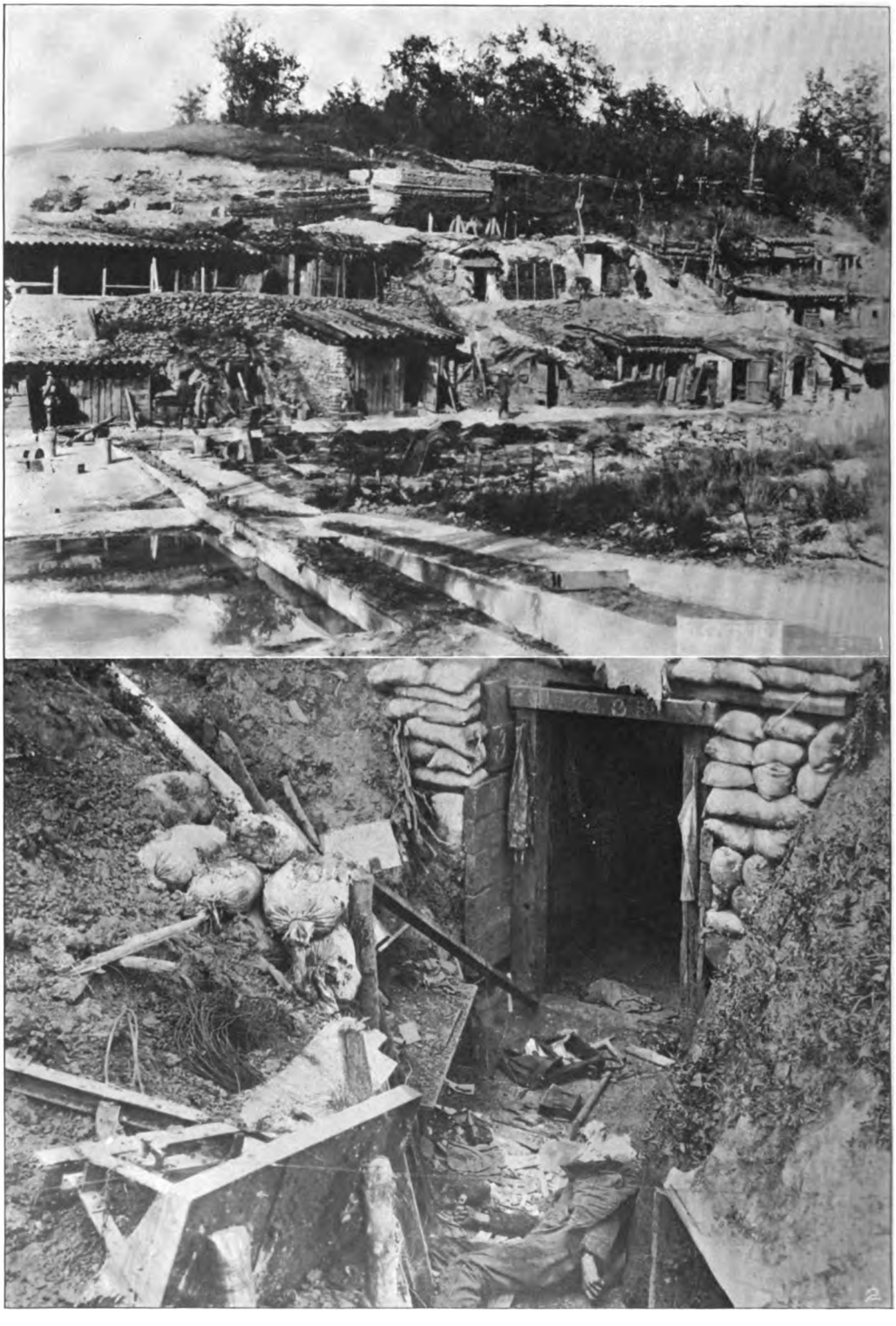

1 Dugouts in a hillside near St. Mihiel, a third line position

2 War scars outside a German dugout

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that a great attack was about to be made against Lorraine, with its valuable coal mines. The ruse succeeded, since it induced the Germans to strengthen the defenses of Metz.

During the night the artillery fire was concentrated along the line between the Meuse and the Suippe, a distance of 40 miles, and after three hours the infantry went forward at 5:30 on the morning of the 26th. Near the Meuse the Americans found weak resistance and went forward for seven miles. In the Argonne they met stout opposition and barely advanced. Just east of the forest they advanced about two miles. The next day they continued the struggle, despite strong counterattacks, and took the fortified hill on which was the town of Montfaucon, from which the imperial crown prince was said to have viewed the battle of Verdun. It was Pershing's plan to hold back the line in the Argonne and flank the enemy out of the place; but the enthusiasm of the troops on the line that ran through it would not be stayed, and they began to work their way forward as the flanking forces day after day ate into the strong defenses on their right. The Argonne had long been considered by the Germans an impregnable position, and it had been used as a place of recuperation for divisions that had been severely used in battle elsewhere. It contained moving-picture theatres, barracks and excellent quarters for the officers. Its defenses were elaborate. The surface was broken with ravines and outcropping stony ledges and it was covered with dense undergrowth. The roads and paths were well known to the Germans who had mapped them accurately and held them under artillery range. The forest was full of machine-gun nests placed at the most advantageous points. Against this position General Pershing sent his 77th and 28th divisions, the former being composed of drafted men chiefly from New York City. The persistence with which these city-bred men stuck to their task was one of the surprises of the engagement. The 28th was a National Guard division from Pennsylvania.

After the initial advance Pershing held back the divisions nearest the river and concentrated his efforts along the edge of the Argonne. By 4 October he had brought up his artillery and was ready for another step forward, and on that day two miles were wrung out of the enemy's hands by hard fighting. Then followed six days of stern encounter, at the end of which the Argonne was clear of Germans and the Americans stood 12 miles north of the position occupied when the attack began on 26 September. They had broken the old line of defense, known by the Germans as the Brunhilde line, and behind it the slighter Freya line. Before them was the Kremhilde line, an intricate system of trenches, to penetrate which General Pershing summoned all his resources.

Meanwhile the French under General Gouraud had been advancing in the most gallant manner. Before them was the extensive and difficult system of trenches which had defied their best efforts in the two battles of Champagne. But their attack of the 26th was so overwhelming that these strong positions were pulverized and taken by the French with about 10,000 prisoners. General Gouraud then attacked the supporting trenches which yielded slowly. As Pershing worked his way up the eastern side of the Argonne and through its tangled undergrowth, the French pushed forward on the western side, the two armies coming into touch at Grand Pré, at the northern edge of the Argonne, on 10 October. Along the left flank of his attacking column he encountered strong resistance but overcame it, going forward three miles. To renew his attacks he needed fresh troops and Pershing loaned him the 2d American division. Thus strengthened he assaulted the enemy's line on 4 October, the day Pershing made his second lunge east of the Argonne. The 2d division carried Blanc Mont, a strong position commanding the region north of Somme Py, carrying the defenders back three miles. The French pressed their advantage and there was a general advance of five miles. The impetus thus gained was not lost in the succeeding days. In the fighting of Pershing and Gouraud from 26 September to 11 October, a steady progress was obtained; but it did not achieve all that Foch expected of it. It was his design to break through quickly to the Sedan-Mezières Railroad and cut off the troops in the Rheims-Cambrai sector from their supplies while they were so hotly engaged that they could not retreat. But the progress of his right was held up by strong fortifications. In front of Pershing stood the Kremhilde line, a series of well-placed trenches from three to five miles deep that was to test his courage for many days yet.

Meanwhile the whole Allied line west of Gouraud was the scene of heavy fighting. On the 27th, the day after the attack on the right, Haig was given permission to deliver the attack on the Cambrai-Saint Quentin line. It was a difficult task, for before him was the strong Siegfried position. This system of trenches at the critical part of the great line ran for the most part along the banks of the Scheldt Canal. Between Bellicourt and Vendhuile the canal ran through a tunnel for a little more than 5,000 yards. The Germans filled this tunnel with canal-boats and walled up the ends. The boats were converted into sleeping-quarters, and the towpaths made excellent corridors. They thus obtained a vast subterranean chamber, in which more than 12,000 men were concealed so far below the surface that they were safe from the largest shells. Lateral shafts led to a village several hundred yards away enabling the men to come and go without detection from the air. North and south of the tunnel the canal was 60 feet wide and the banks were steep. Against this sector of the well-constructed Siegfried line General Haig decided to throw his army. If he broke through completely he would have a clear way to Hirson on the railroad that supplied the rear of the battle-line. Thus, while Pershing was battling his way toward Sedan, and Gouraud was struggling for Mezières, Haig sent forward a strong portion of his army in the direction of Hirson, all important points on the vital railroad system. As we shall see, these three main thrusts were supplemented by other blows against other parts of the great line of battle, delivered simultaneously to keep the Germans busy.

The main British blow was to be given between Vendhuile and Holnon, a sector 10 miles wide. But Haig would not make his first onslaught there, partly because it was the strong-

est part of the Siegfried line and partly because he wished to deceive the enemy and induce him to concentrate elsewhere. He accordingly opened a heavy bombardment against a section of 30 miles, including the point to be attacked in main force. Following this he made a strong attack with the 1st (Horne) and 3d (Byng) Armies in the section north of Vendhuile. On the morning of 27 September, the day after the attack began in the Argonne region, these two armies went forward on a 13-mile front. Their most determined effort was made in the region in front of Cambrai. Four divisions, three of them Canadians, led the attack across the Canal du Nord and opened the way for other divisions to follow. By nightfall the lines were carried forward three miles on an eight-mile front with the capture of 10,000 prisoners and 200 guns. Next day the fighting was renewed and the British advanced to the bank of the Scheldt Canal, three miles southwest of Cambrai.

By this time the Germans were busily engaged in two important contests, and Foch thought it time to add to their embarrassments. On the 28th he sent forward a force of Belgian, French and British troops, under the command of King Albert of Belgium, on a 20-mile front in Flanders. It was directed against the German army of General von Arnim which had begun to feel the effect of Ludendorff's straitened circumstances. Having used up their general reserves, the Germans were now forced to take from one part of their line to protect another; and as von Arnim had seemed to be the German general in least immediate danger, troops had been taken from him to strengthen the lines elsewhere until he had only five divisions left. They were no match for the superior forces of Foch, and in two days' fighting were forced back to a maximum depth of eight miles. The Allies were within three miles of Roulers on the road from Ypres to Ghent, and they took 10,000 prisoners. It began to appear that King Albert's army would outflank the entire German line at its northern end.

Nor was this all the misfortune that came upon Ludendorff. He well knew that Haig's forces before the Saint Quentin section were massed for an attack and dared not weaken his line there. While he waited at this point for the expected blow Foch gave still another thrust. This time it was between the Ailette and the Vesle in the Chemin des Dames region. Generals Mangin and Guillaumat were sent forward on the 28th and in a three days' combat carried their opponents back more than three miles. It was hard fighting in the best manner of the French, to whom the certainty that retribution was at hand had brought a state of exalted courage that would take no denial. By their side fought Italian divisions.

On the 28th, therefore, Foch was pressing the Germans in five places: along the Meuse, west of the Argonne, in front of the Chemins des Dames, in front of Cambrai and east of the Ypres salient. In each place his troops were advancing slowly despite the dogged fighting of the best German units. Then came Foch's great blow at the tunnel sector of the Siegfried line. Here stood the British 4th army under the command of General Rawlinson. For two days his guns had poured a steady fire on the German trenches, and his infantry had been thrown forward against some of the enemy's outposts, crushing them in. Serving in his force at a point opposite the strongly-fortified tunnel was the 2d corps of United States troops, consisting of the 27th and 30th divisions. On 27 September a regiment of the 27th division carried some of these outposts in front of the tunnel and thus brought the two divisions directly *vis-á-vis* with that formidable position.

The main attack was made at dawn 29 September, the two American divisions going forward side by side with some of the best British troops. Behind them were Australians and other British troops in support. South of the tunnel sector the North Midland troops, 46th division, Englishmen, crossed the canal on mats, portable boats and life-belts and carried the German trenches on the east bank in a desperate battle. North of the tunnel other British troops drove back the foe and a portion of them entered the outskirts of Cambrai. Against the tunnel sector the two American divisions charged with determination. The 27th encountered stiff resistance but penetrated the German lines and a part of them went forward for a considerable gain. But the main body was held up by having to defeat the large number of the enemy who swarmed up from the underground chambers. Here they fought all day on the Siegfried line. In the evening British and Australian troops came up in support and going through their lines pressed the Germans back still farther, and the 27th was sent to the rear to recuperate. Meanwhile the 30th had gone through the section of the Siegfried line on its front, taking Bellicourt and Nauroy and holding them against counterattacks, after which the division was withdrawn to rest but ordered back into line almost immediately.

Meanwhile, the British troops were carrying on the struggle in this vital part of the German defenses. The breach at the tunnel was of vital importance and the troops that poured through opened beyond it fan-like, always encountering the stiffest kind of resistance. South of the British the French army of General Débeney moved against the defenses of Saint Quentin, carried them and entered the town on 1 October. These were serious days for the Germans, each 24 hours bringing them a new disaster. On 30 September it was announced that Bulgaria had accepted an armistice that amounted to complete surrender. Next day Saint Quentin fell and to its loss was added the capture of Binarville by Pershing, and Condé and Marvaux by Gouraud. On this day, 1 October, Mangin pushed on in the Aisne Valley, clearing a considerable part of the southern bank of the Ailette. The British also advanced in the region of Cambrai, taking a firmer hold on the adjacent positions. On the same day they announced that for the previous two months they had captured 123,618 Germans and taken 1,400 guns.

On 2 October this policy showed its fruits when the Germans began to withdraw on a front extending from Lens to Armentières. The move was made necessary by the pressure of the Allies on each side of this sector, that is, at Cambrai in the south and on the Roulers front in Belgium, where a force of Belgians and British were advancing. To increase the

pressure at the latter point Foch sent forward a French army under General Degoutte. Some days passed ere it got into action, but in the south the French armies were actively engaged, advancing at Saint Quentin slightly and making some gains on the Aisne and northwest of Rheims. In the Champagne General Gouraud took an important step toward Vouziers. On this day came news that General Allenby had taken Damascus on 1 October with 7,000 prisoners.

On 3 October the French armies kept up their pressure in the south and the British went forward near Cambrai and in Belgium. They also occupied Lens and Armentières, long contested by the Germans, whose voluntary withdrawal at this time indicated how hardly they were pressed in other quarters. The British followed after them and came next day within six miles of Lille, which they hoped to take without a destructive cannonade. The day of 4 October, also, brought them heavy counter-attacks in the sector between Saint Quentin and Cambrai, which they repulsed with steadiness. On this day Generals Gouraud and Pershing, having brought up their guns, made a new attack which gave each of them an important step forward. The first, with the aid of the 2d division of the United States troops, took Blanc Mont commanding the region north of Somme Py. It was so important a gain that next day, the 5th, Gouraud moved forward on a line running east to the Argonne, advancing as much as five miles in some parts of it. On the east of the Argonne Pershing made important gains that flanked the formidable forest and enabled the lines within its recesses to move forward two kilometers. On the 5th, also, the British delivered telling blows against the Siegfried line south of Cambrai, where it remained intact. They weakened its resistance and prepared the way for a more serious blow a few days later. On this day it was announced in Berne that Austria had appealed to President Wilson through the Swiss government for a Peace Conference, at which terms should be discussed. Next day, 6 October, it was announced that Germany joined in the appeal and asked for an immediate armistice on the basis of the Fourteen Points and supplementary demands announced by President Wilson. This action gave the war a sudden and decisive turn. It was the beginning of surrender and the Germans could not hope to resume their battle with any pretension of victory after it was announced. In the Allied countries it was received with an air of disappointment. For more than four years the Germans had seemed to have the advantage: now that they were clearly facing defeat should they be allowed to escape punishment by crying "Kamerad"? For several days the request was the chief object of debate in the newspapers, until President Wilson sent a reply designed to make Germany specify her terms of submission.

Meanwhile, there was no relaxation of military efforts. Winter was approaching and it did not behoove Foch to allow the enemy respite under cover of negotiations until he could place himself behind its friendly protection with immunity for another quarter of a year. Steady pressure, therefore, continued on 7 October and on the 8th the British with the aid of the French army of General Débeney hurled themselves on the softened Siegfried line south of Cambrai and swept it away on a 20-mile front, advancing three miles in most of that sector. In this act the 30th United States division took an important part at the point where the French and British elements approached one another, taking the towns of Brancourt and Prémont after severe fighting. Next day the blow was repeated on a more extended front and with even greater success. The weakened condition of the enemy was shown by the fact that he staggered back nine miles at some parts of the 30-mile sector in which he was attacked. On this day, the 8th, Cambrai, for four years an objective of the Allies, was occupied and 10,000 prisoners were taken. On the Meuse the day was signalized by a renewal of the attacks of General Pershing, who was now hard against the Kremhilde line. In a great thrust he took Romagne and thus drove an initial wedge into the system, beginning a steady series of advances which were destined to carry him through the entire series of trenches and bastions, at the end of the month. On 10 October Generals Rawlinson and Débeney continued their attacks east of Cambrai and Saint Quentin. Le Cateau was taken by the British and the Germans were forced back to the Selle River, where they undertook to organize a line of defense. It was a slender hope; for there was no time for constructing proper trenches and the pursuers, turning every stone to get up their guns, could not be expected to delay more than a few days before drenching the new lines with another of the concentrated cannonades before which no human beings could stand. On 17 October the attack was renewed and the Germans were pushed back with little effort until they stood behind the Sambre Canal. Here the British were within 20 miles of the railroad through Hirson.

The effect of Rawlinson's advance was to produce two salients, one to the north and one to the south. To the south Laon was the centre of the new salient. It was so exposed that the Germans began to draw in their lines on its front as early as 10 October. Here General Mangin held the lines on the French side, and beyond him in turn came Guillaumat, Berthelot and Gouraud, all of whom kept up steady pressure during these critical days. On 13 October Gouraud made a great effort and advanced until he all but had Rethel in his grasp. This was fair warning to the Germans and they did not dare ignore it. On that day they withdrew from Laon and La Fere, long their firm pivots in the great angle of their line of defense on the Western Front. The French occupied these places and prepared for still further progress toward the vital railroad behind their enemy's front.

To the north of Rawlinson's line of advance began the great angle in the line which swept around Douai and on to Lille and then turned eastward into Flanders, passing in front of Courtrai and Roulers before it recovered its northward direction and reached the sea at Nieuport. Against this salient Foch now turned his most active efforts. By this time Degoutte was in a position to aid effectively the Belgians and British on the northern side of the salient. Heavy pressure was, therefore, put on the lines in front of Roulers, where the Belgians had been slowly advancing for several days. On 14

October the place was taken and the adjacent lines were carried forward on a 12-mile front. Next day the effort continued with even better results, and an advance of from three to five miles was obtained on a front of 25 miles, with a total result of 14,000 prisoners in the two days. On the 16th the German line in Belgium, from Lille to the sea, became mobile and turned back, the defenders retreating so fast in some parts that the pursuers lost contact with them. The explanation is that Ludendorff had been forced to draw heavily on this line in order to resist the blows of Rawlinson and the French in the south. He knew that the Flanders line was in no condition to resist a hard drive north of Lille, where the Allies had come within 20 miles of the Dutch border. If they drove this distance they might capture the Germans in the coast towns of Ostend and Zeebrugge. With that resourcefulness and quick determination which characterized all his actions he knew there was no time to wait, once Foch turned his attention to this northern sector; and the next few days were characterized by rapid withdrawal from the Belgian seacoast. In order that this might be done, it was necessary for the line to swing back in an orderly way, the Nieuport end coming around to Bruges and then to the boundary of Holland, east of Ghent. By this means the Lille–Courtrai positions became a pivot. It was Foch's chief purpose to take these positions and break up the plans of his opponents.

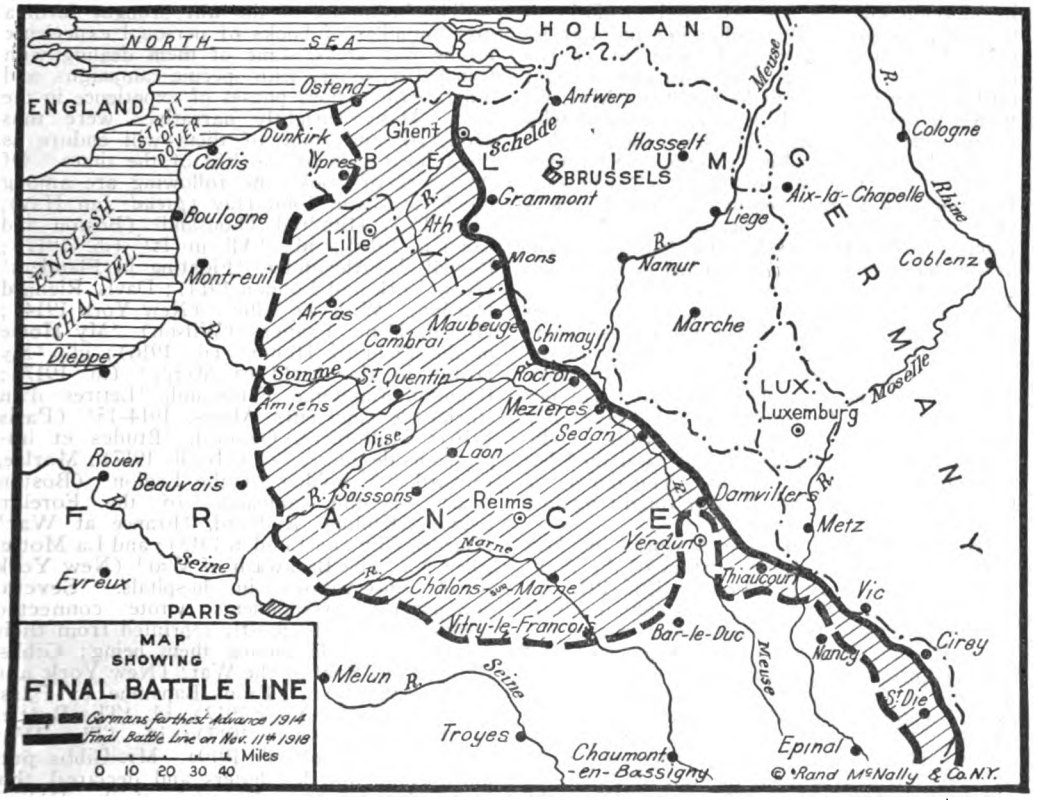
On 17 October the movement continued. The Germans stiffened their resistance at the pivot, but the wing swung back on a 30-mile front for a distance of 12 miles at its eastern end. Ostend was evacuated and received a British naval force that came to it from the sea, while the Belgian force in Nieuport hurried forward by land. On the same day Belgian patrols entered Bruges, the Germans falling back toward Ghent. South of the pivot the British pressure was irresistible and Lille and Douai were occupied. Still farther south Rawlinson crossed the Selle River, taking another mile or two from the distance that separated him from the railroad north of Hirson. On the 18th and 19th the same tactics were pursued, and the coast region was cleared, the Belgians coming into contact with the Dutch boundary northeast of Ghent. During this period heavy fighting continued around Courtrai, the British going ahead slowly. They gained Courtrai on the 20th and pushed on toward Tournai. Next day there was heavy fighting before that town and Valenciennes without notable success. The French were before Ghent, where the Germans held them at bay. Meanwhile, the French in the south had made slight advances between the Oise and the Serre and before Vouziers, while Pershing was eating into the German defenses west of the Meuse. Taken all in all, it is evident that the army of the kaiser, though badly handled, was making a good fight for its existence. The men were very tired and the reserves were used up; but the soldiers displayed much tenacity in these days, holding where ordered to hold and falling back in good order when directed to fall back. The immediate object of their commanders was to get safely behind the Scheldt and make a stand there. From Valenciennes north this river was deep and broad enough to make a good defense position. To the south it was not a barrier and it was here that Haig attempted his next advance, going forward 24 and 25 October between the Scheldt and the Sambre and taking 9,000 prisoners in two days. On the second day the French opened a drive on a 40-mile front, Débeney between the Oise and the Serre and Mangin on the southeast of the Serre, both advancing for clear gains. East of Mangin was Guillaumat who also moved forward. This progress was resumed 27 October and there were gains of as much as five miles, and on the 28th two miles were made. During this period comparative quiet reigned in Flanders, but it was broken on the 31st when there was an advance on a 15-mile front between Deynze and Avelghem, the Germans fighting hard and stopping when they reached the banks of the Scheldt.

By the end of October the exchange of notes between Germany and the United States had proceeded far enough to show that peace was imminent. Each side was straining every nerve to fight its best in these last days, the Allies to force their opponents as near to defeat as possible, and the Germans to maintain their positions and give basis to their claim that they were not beaten to the point of submission. How well they carried out this plan is shown by the fact that although the British fought hard during the month of October they took only 49,000 German prisoners, whereas they took 66,300 in September and 57,318 in August. The Germans were conducting a successful retreat in Flanders and offering a stout resistance in other parts of their lines. It seemed that they were in a fair way to protect their communications until winter arrived and caused the Allies to suspend their attacks. Their calculations were defeated by the success of the United States troops in breaking through the German defenses on the Meuse.

General Pershing spent the last half of October in turning the Germans out of the Argonne Forest by flanking them. That done he brought up his heavy guns in front of the strong system of defenses that extended across the open country from Grand Pré to the Meuse. At the end of the month he had made several attacks on it but not in force. On 1 November he opened an overwhelming artillery attack on the system and followed it with an infantry movement that carried him forward four miles. The next day he continued his advance, completely freed the German defenses, and rushing forward in motor trucks took Buzancy, the railhead by which the Germans in this sector received their supplies. His quick action so disconcerted them that they fell back in confusion. He followed closely, giving them no time to construct new defenses and on the 6th his troops arrived in that part of Sedan that lies south of the Meuse River. At the same time he threw a portion of his army across the Meuse and was in a position to advance on Metz when it seemed wise.

This sudden break-through completely cut the German line of communications through Metz and Luxemburg. It made it impossible to hold the line of defenses north of the Aisne and in the Champagne, and it was followed by a rapid retreat throughout this area. In fact, it placed the Germans in a precarious position throughout that portion of their lines that did

not depend on the railroad through Liége for its supplies. The effect was seen in the evacuation of Valenciennes and its occupation on 2 November by the British. On the same day General Gouraud made a notable advance on Pershing's left. On the 4th Haig went forward three miles on a 30-mile front, taking 10,000 prisoners and 200 guns; and Débeney on his right won two miles. On the 5th the Germans drew back on a 90-mile front from the Scheldt to Rethel allowing their opponents to advance five miles in some places, but in Flanders they were able to hold their line. Next day the feat was repeated, the British advancing on their whole line an average depth of six miles, and the French making a similar advance north of the Aisne. Each day now added great gains



of territory. The Germans dared not wait in their tracks with Sedan in hostile hands but strove hard to get out of danger before they found themselves out of supplies. Thus, Gouraud pursuing them invested Mezières on the 8th and Débeney took Hirson on the 9th. The British pushing on east of Valenciennes came to Mons 10 November, where the war began for them on that fatal day, 20 August, in 1914.

Next day, 11 November, the armistice went into effect and the fighting was at an end. The long battle line which for four years had roared night and day came to a sudden state of quietude, and soldiers came out of the trenches and cut capers where an hour before to be seen was as good as to die. Thus ended the long period of trench warfare on the Western Front, dying away as a life goes out of the human body after a long strife with disease. No more the heavy breathing that sounded through the house, or the coming and going of the attendants, or the hushed expectancy; in its stead the strange quiet of absolute rest. That is the way the first days of peace seemed to a world that had given more than four years to the sole business of watching, serving, praying and dying for the war in France.

In testifying in 1919 before a Parliamentary investigating committee Field Marshal von Hindenburg is reported to have said that the war was lost through the breaking down of the "home front." It was a military man's way of looking at the situation. It is true that the defection at home, the longing for peace and the hatred of the people for the system that had brought them to their state of suffering had reacted powerfully on the army. But the question may arise: How far is the military class justified in testing the endurance of a people in support of war? and had not the war leaders in 1918 demanded all the sacrifices of the people they had a right to demand? The war in Germany had gone on until every economic factor in the country's life was exhausted. Men had died in vast numbers and there was no prospect that they would gain anything by continuing to die. The nation believed that it was time to end the war. In a proper sense the war ended itself. That is, it fought itself out to its own finish. Political conditions did not end the war. The political condition that von Hindenburg

saddled with the responsibility for the defeat of Germany was itself a result of the war. It was bred in the war. For it the war leaders must assume responsibility.

In a narrower sense we may ask whether or not Germany was defeated in a military way. Up to 1 November it was not possible to say she was defeated. Her lines were heavily beset but they still held. Then came Pershing's break through and the capture of Sedan. After that Germany was defeated. It is true her armies were not back to the Rhine, but they were isolated and pressed by greatly superior foes. With heavy losses they might have drawn back through the roads in the Ardennes in the cold, but it would have been as Napoleon retreated from Moscow, with a victorious enemy harassing at every step, and in the spring the *coup de grâce*. Ludendorff was beaten when he surrendered. He was too good an officer to give up too soon. By prolonging the war he could have inflicted more punishment on the opponents of Germany and a greater amount on Germany herself, but he could not have obtained better terms. It is a wise general who knows when he ought to lay down the sword.

The honor of breaking through the German defenses was not all Pershing's. Rawlinson's feat north of Saint Quentin was equally valorous. Moreover, Pershing could not have reached Sedan if French, British and Belgian armies had not been fighting hard in other sectors to hold the attention of the Germans. Against the German ring blows were being delivered simultaneously in several places, wearing thin the iron ring. It was the blows of the men from the United States that first broke through. If they struck harder they had not struck so long. Fresh, ardent and brave, they were in a position to reap the fruits of the service of those who had fought and died before they came into the war. The defeat of Germany was won by all who fought against her.

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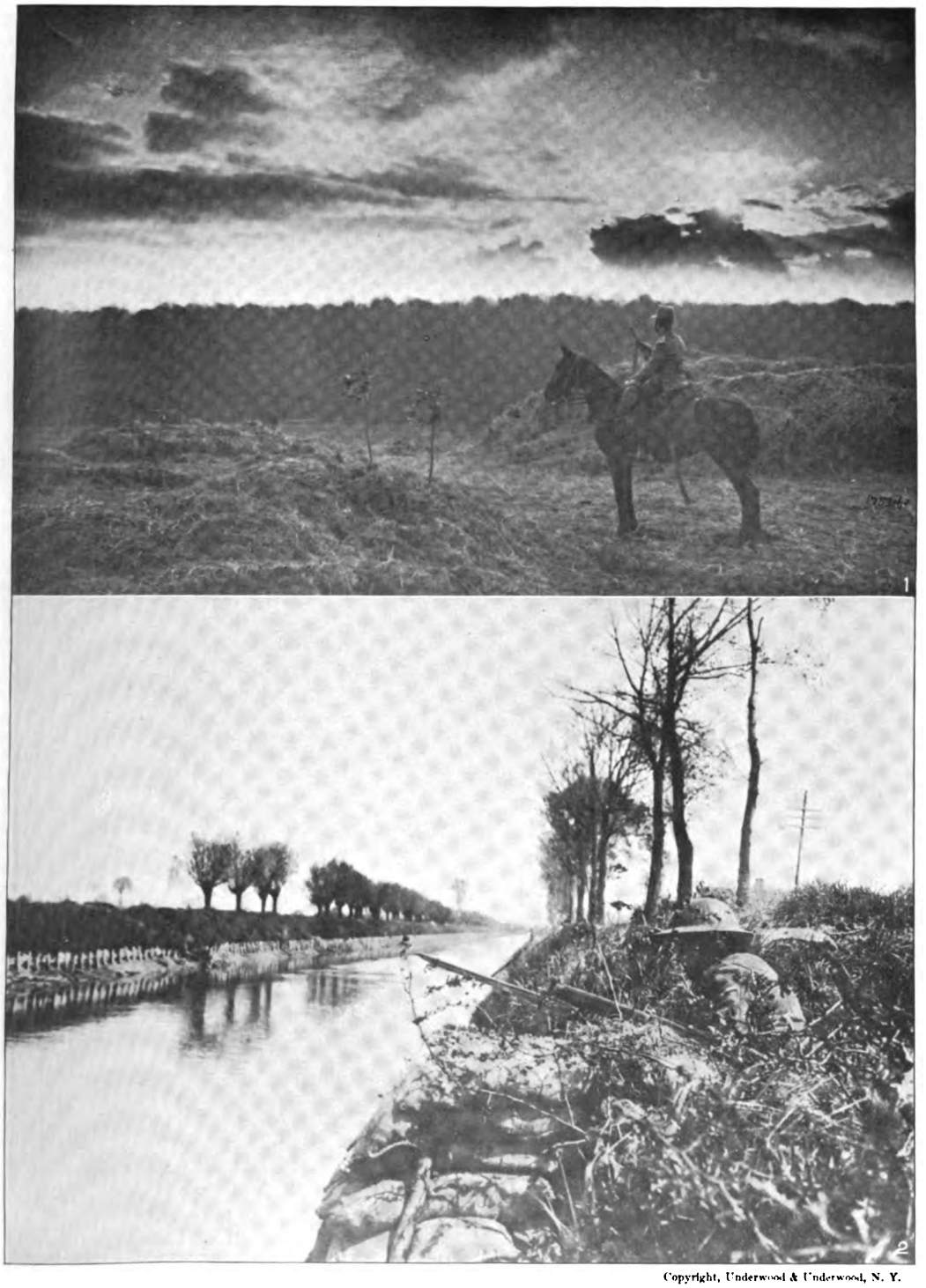

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LONELY VIGILS

1 Lone French trooper on guard on one of the early battlefields

2 British sentry on outpost duty on Western Front

1 French sniper firing from a trench
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2 French sentinel with gas mask before his cavern
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6. THE EASTERN FRONT. 1. The Strategic Situation on the Eastern Front.— To understand the war on the Eastern Front, between Russia and her Teutonic enemies, one must grasp the significance of the map: the great Polish salient, the railways, and the generally flat character of the terrain. Russian Poland, with its political and railway centre at Warsaw on the Vistula, projects westward like a great wedge of Russian territory driven between the German provinces of East and West Prussia on the north and the Austrian province of Galicia on the south. The wedge is roughly 200 miles from north to south, and 250 miles from east to west. Its western point is only 180 miles *via* Posen (or Prussian Poland) from Berlin, and it touches the whole eastern frontier of one of Germany's richest and most valuable provinces — Silesia. This Silesian boundary is a purely artificial one, easy to cross in either direction. But the Russian strategy did not aim at crossing it, at any rate, at the outset of the war, partly on account of lack of adequate railways and transportation, and partly because of the danger to which the Russian flanks would have been exposed. Russia could not afford to run the risk of having a Russian army in the Polish salient «pinched» by a German-Austrian thrust southward from East Prussia and northward from Galicia. Obviously no direct western advance against Silesia could be undertaken by Russia until she had safeguarded her flanks by the conquest of East Prussia and Galicia

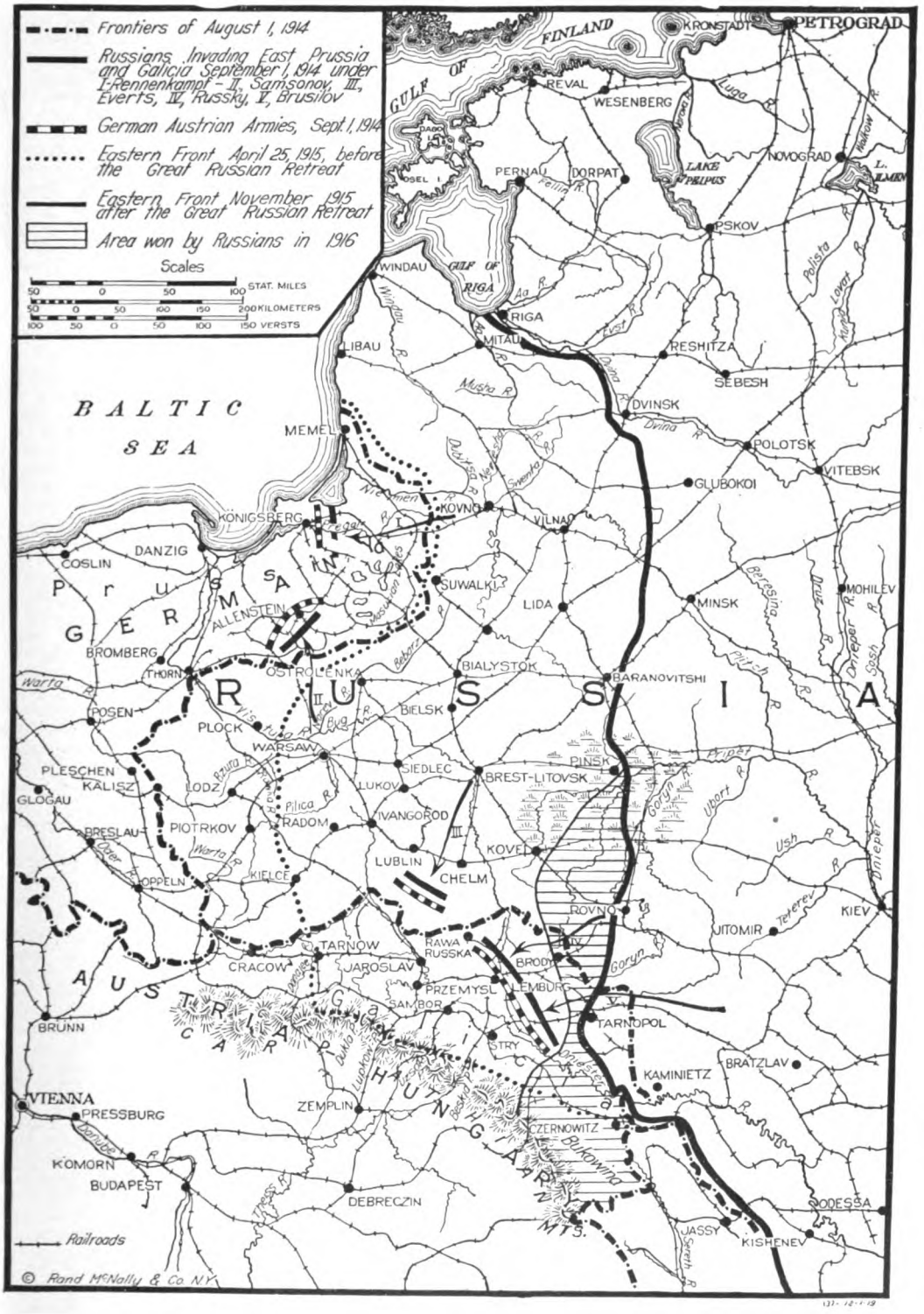
— until her armies were in possession of the Lower Vistula and of the passes of Carpathian Mountains. Russia's first strategic task, therefore, was to occupy East Prussia and Galicia on the two sides of the Polish salient.

The railways available for the movement of Russian troops were very inadequate as compared with the splendid system of strategic railways which Germany and Austria had constructed. Germany had 17 lines of railway leading to the Russian frontier, which, it was estimated, would enable her to send 500 troop trains daily, so that she could concentrate some 600,000 men on that border within a few days of a declaration of war. On the Russian side there were only six railway lines. So, too, with Austria. The Carpathians had been pierced by seven railways so that troops could be poured from Hungary into Galicia and up to the Russian border at the rate of 250 trains every 24 hours. As against this Russia had only four lines. The German and Austrian railways consisted not only of the great trunk lines for commercial use, but connected with these were also numerous strategic lines running parallel and close to the frontier with many small branches shooting out rail-heads to the towns on the frontier. From such rail-heads troops could be rapidly detrained and military supplies sent forward by automobile trucks, The Russians, however, had no such network of railways parallel to the frontiers; they had nothing but the few trunk lines which crossed the frontier at right angles. Thus Germany could shift her army corps very rapidly along the Russian frontier as needed. Russia could not shift hers nearly so quickly, and only slowly could she bring up reinforcements from the vast interior stretching to Siberia and the Caucasus. This inferiority in railways will explain several of the severe reverses which Russia suffered after apparent initial successes. Germany's advantage in the matter of railways, however, became less and less as she invaded Russian territory and found herself handicapped by lack of railways and by bad roads; the further German armies penetrated Russia, the more they were slowed down until finally brought to a standstill.

The character of the terrain, together with the inadequacy of the railways, had long before the war determined the Russian general staff not to attempt to defend the western part of the Polish salient; for the country is a vast, flat, monotonous, open plain (the name «Poland» comes from the Slavic «polye» meaning steppe or plain). Over this plain German armies rapidly mobilized in Silesia could easily sweep. Moreover, a large Russian army in the western part of the Polish salient was always in danger of having its line of communications through Warsaw cut off, or of being surrounded by German and Austrian armies coming south out of East Prussia, or north out of Galicia. Therefore Russia had selected the Vistula River as the first line of defense. Rising in western Galicia, near Cracow, at the corner where the German, Austrian and Russian empires met, the Vistula flows for 100 miles northeastward, and forms the boundary between Russian Poland and Galicia. In this region it receives the flood of water which tumbles northward from the slopes of the Carpathian Mountains in the Dunajec, Wisloka and San rivers. Thenceforth a majestic river, unfordable, seldom crossed by bridges, and subject to terrible floods, the Vistula forms one of the most serious military obstacles in Europe in its course northward to the Baltic. In the 19th century it had been further strengthened as a defensive position in its middle course by the construction of fortifications near its banks at Ivangorod, at Warsaw, and at Novo Georgievsk where the Narev joins the Vistula. As a further protection against attack from East Prussia other forts (Zegrje, Ostrolenka, Lomza, Ossowietz and Grodno) had been stretched eastward from Novo Georgievsk to Kovno. These fortresses formed Russia's famous Narev-Bobr-Niemen line of defense. It derived such additional strength from the swamps, ponds and forests to the north that Hindenburg twice failed in his efforts to break it.

On the south, however, toward Galicia there was no such good line of defense. The boundary was purely artificial. Here Russia was left vitally open, between Lublin and Cholm, to an Austrian thrust from the southwest which could strike behind Warsaw and the Vistula, and advance on Brest-Litovsk, as was to happen in 1915. Owing to this danger and to the belief of Russian artillery experts that the Vistula fortresses were out of date, it was decided by Sukhomlinov, Minister of War, after the Russo-Japanese War, that Russia's main line of defense should be moved 75 miles eastward, from the line of the Vistula to the famous Brest-Litovsk line. This is formed by the Niemen and Bug Rivers. It is protected in the north by the Niemen-Bobr-Narev rivers and fortresses, and in the south by the fortresses of the Volhynian triangle — Rovno, Dubno and Lutsk. Unfortunately, in accordance with Sukhomlinov's plan, the old fortified outworks of the Vistula line were destroyed in 1912, before the new Brest-Litovsk line had been completed. But this mistake did not prove as fatal as might have been the case, because Germany's plan of crushing France first, before turning east to deal with Russia, gave Russia not only time to mobilize behind the Brest-Litovsk line as planned, but even to change her plan, begin a forward movement in Poland, and make a vigorous offensive in East Prussia and Galicia.

2. Russian Mobilization and Commanders. — Russian mobilization, for which the preliminary orders were probably given on 25 July 1914, took place more rapidly than the Germans had supposed possible. It was accompanied by great demonstrations of national enthusiasm and patriotism. The people felt that this was a war of defense against the hated German imperialists who had so long been threatening Russia outwardly and exploiting her inwardly through commerce, industry and office-holding. The prohibition of the use of vodka at the same time saved the Russian peasant from his greatest weakness and undoubtedly, for the time at least, added to the efficiency and speed with which mobilization was accomplished. It was complete, so far as the first armies were concerned, by the middle of August 1914, and gave Russia nearly 2,000,000 troops available on the Brest-Litovsk line. In addition to these there were 2,000,000 more men ready in Siberia and the Caucasus, and many millions more who could be eventually mustered into reserve



EASTERN FRONT IN 1914, 1915 AND 1916

formations and sent to the front, if arms could be found for them.

The man selected as commander-in-chief of all these forces was the tsar's uncle, the Grand Duke Nicholas. He was a striking figure, powerfully built, and well over six feet in height. In spite of his 59 years, he was full of energy and force. Having received his military education at the famous General Staff Military Academy at Petrograd, he afterward had seen extensive experience in cavalry commands. As inspector-general of cavalry before the war he had come to know most of the cavalry leaders and practically all the prominent officers. Severe and fiery in temper, he nevertheless had the respect and sympathy of the troops he was to command. He was every inch a soldier, and his appointment as commander-in-chief was highly hailed with enthusiasm by the whole Russian press and people. Sukhomlinov assigned to him as his nearest assistant, that is, as chief of the general staff, General Yanushkevitch, only 42 years old, but believed to be a brilliant strategist — a second Moltke. He had had, however, very little war experience and was to disappoint sadly the hopes which had been placed in him. The real strategic ability in the Russian command lay in the half dozen army group leaders and staffs like Alexeiev-Brussilov, Ivanov, Russky, Kornilov and others — men who had risen by virtue of sheer ability and learned war in the bitter experiences of the Manchurian campaigns.

From the moment it became clear that Germany was striking her main blow first against France and was merely standing on the defensive in the east until France could be crushed, Russia decided to change her original strategic plans. She gave up the idea of standing on the defensive behind the Brest-Litovsk line. To aid her hard-pressed French ally she decided to undertake two great offensives, one into East Prussia, the other into Galicia. This was good strategy. An invasion of East Prussia was expected sooner or later to force Germany to send troops to the Eastern Front and thus relieve the German pressure on France in the west. Similarly an early invasion of Galicia, which the Germans did not expect, would check or defeat the Austrian invasion of Serbia, and would also have a demoralizing effect on Austria's hold on her oppressed Slav and Rumanian subjects. If Russian troops were able to reach the Carpathian passes and threaten an invasion of Hungary, Hungarian allegiance to the Central Powers might begin to weaken. Russian success on these two flanks to the north and the south was also the necessary preliminary, as has been pointed out above, to any great advance by the Russian centre westward through Warsaw. Such an advance was desirable, if possible, to protect Russia's own mining and industrial cities in the western part of the Polish salient, and to threaten those of her enemy across the border in Silesia. For these offensives the Russian forces were organized into five armies arranged in two army groups, each under a commander-in-chief with his own staff.

The Northwest Army Group, which was to strike into East Prussia, consisted of two armies — Rennenkampf's and Samsonov's — under the command of General Zhilinsky, appointed through the favoritism of the Minister of War Sukhomlinov. The ultimate disaster at Tannenberg was due in no small degree to Zhilinsky's failure to co-ordinate the operations and protect Samsonov's left flank. His two subordinates, however, were men of unquestioned ability, with brilliant military records. Rennenkampf, in charge of the most northern army, with his base on Kovno, was to drive straight west across the frontier of East Prussia toward Koenigsberg. Samsonov further west, with his base on Warsaw, was to march north along the line of the Warsaw-Dantzig Railway, strike the flank of the Germans who would be retreating before Rennenkampf's superior forces, and then unite with Rennenkampf for a victorious advance to the banks of the Lower Vistula. This invasion of East Prussia would deprive Germany of one of her richest agricultural regions and spread consternation in the minds of the Junkers whose great estates lay in East Prussia.

The Southwest Army Group, destined for the invasion of Galicia, was placed under the command of General Ivanov, with his base on Kiev. His chief-of-staff was General Alexeiev, later to be famous throughout the world as chief-of-staff to Nicholas II, after the tsar took over the supreme command from the Grand Duke Nicholas in September 1915. Alexeiev, after receiving his first baptism of fire in the Russo-Turkish War of 1877–78, did not enter the Military Academy at Petrograd until several years later. But when he did so, he at once distinguished himself. He had already served as chief-of-staff to Ivanov 10 years before in the Japanese War. He there worked out the strategical plans which won honor for them both and fitted him for the high duties he was to undertake later on. His character was of the highest. Even in the supreme position of practical commander-in-chief after 1915, he retained an unusual modesty, simplicity and accessibility, which endeared him to all who had to deal with him directly. Though he might have dined daily at the tsar's table it was characteristic of him that he usually preferred to take his meals at the staff officers' mess, because he could save time by discussing military matters during meal time with officers who had come to headquarters from the various armies.

The right wing of the Southwest Army Group was a small army under General Evart. His movements were so closely directed by his commander-in-chief that this army is often referred to as Ivanov's army. It was based on Brest-Litovsk and its object was to check General Dankl's greatly superior Austrian force. Dankl had early crossed the Russian frontier near the San River with the hope of striking north along the right bank of the Vistula to take Ivangorod and Warsaw in the rear. The Russian strategy could afford to let him come on, provided the Russian centre and left wing succeeded in their drive against Lemberg and Przemysl. For in that case, Dankl's communications would be threatened and he would be in danger of being overwhelmed by the new forces which the Grand Duke Nicholas could move to Poland from the interior of Russia.

General Russky's army, forming the centre of this Southern Army Group, and General Brussilov's army, forming its left wing, made up the force which was to invade Galicia. The

Russians expected great things from it, and they were not disappointed. Russky was one of the most scientific of Russian officers, who as professor at the Petrograd Military Academy had helped to train, and was personally acquainted with, a large number of the younger officers. In the war with Japan he had been chief-of-staff to General Kaulbars and since then had been one of Sukhomlinov's right hand men in the reorganization of the Russian forces. Closely associated with him, was General Radko-Dmitriev. This remarkable man, by birth a Bulgarian, became closely identified with Russia after 1878 when Russia dominated Bulgarian politics. He completed his military studies at the Petrograd Academy, served 10 years in the Russian army and ultimately returned to his native land where he became chief of the general staff in 1902. In the Balkan Wars, as commander of one of the Bulgarian armies which won the battles of Kirk Kilisse and Lule Burgas, he became the popular hero of the war. But disgusted with the quarrels among the Balkan allies which followed, he accepted an offer to re-enter the Russian service with the rank of general.

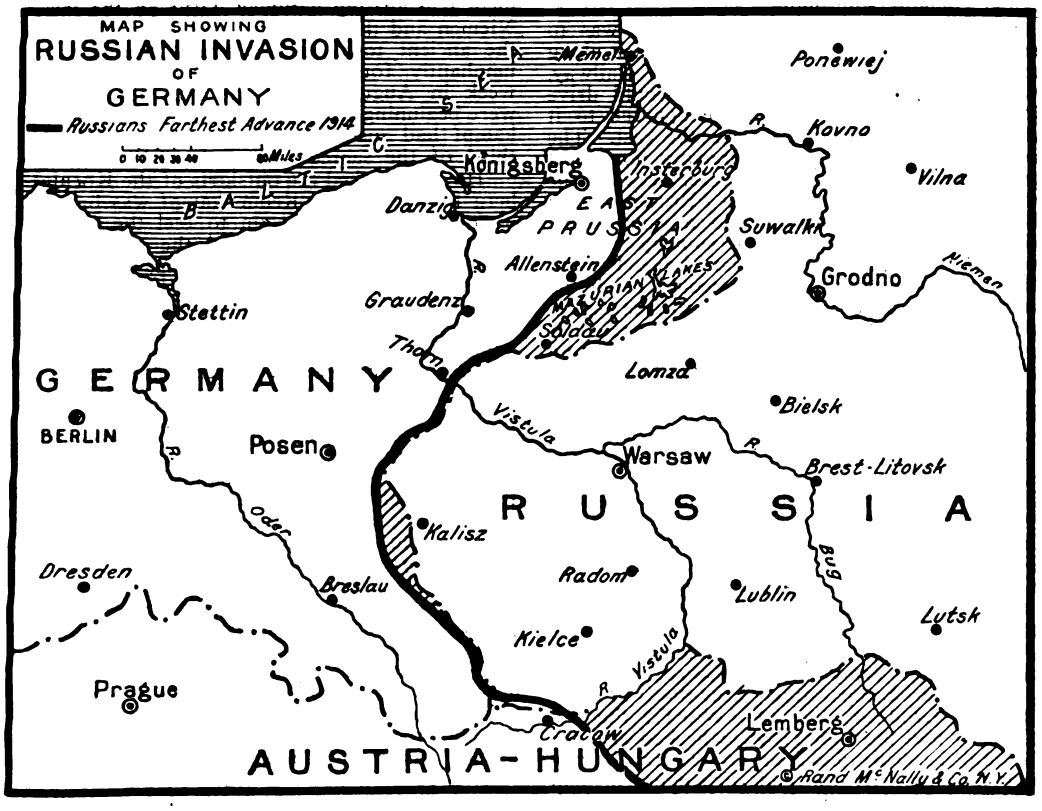
General Brussilov's name was little known when the war broke out. He had not received the higher training at the Petrograd Military Academy, nor enjoyed any marked opportunity to test his abilities. Most of his service had been passed in the school for cavalry officers where he had more to do with the technicalities of troops than with their uses in fighting. But by his ability in Galicia in 1914 and in 1916 he was soon to prove the wisdom of his selection. He became in fact one of the greatest popular heroes of the war, but in 1917 he was forced to resign by the Bolshevists.

Russky, with his base at Kiev, moved southwest from the fortresses of Lutsk and Dubno and crossed the Galician frontier between Sokal and Brody during the last week in August. He aimed to interpose his right wing between Dankl and the second Austrian army under Auffenberg. He could then menace Lemberg from the northeast. Meanwhile Brussilov came west along the Lemberg-Odessa Railway as soon as it became clear that Rumania intended to remain neutral. His original task had been to protect Odessa and southwest Russia from an attack by the Hohenzollerns in Rumania; but, relieved of this task by Rumania's decision, he was able to enter Galicia near Tarnopol and occupy the country as far south as the Dniester River. He could then co-operate with Russky by menacing Lemberg from the opposite side on the southeast. Russky and Brussilov each had over 250,000 men and together outnumbered Auffenberg's army which was stretched across Galicia east of, and covering, Lemberg. The Austrian staff was apparently not aware of the close connection between the movements of Russky and Brussilov. They supposed that they had only Brussilov to face at Lemberg, as Russky would be compelled to go to the assistance of Evarts' army on the Bug.

Such was the favorable situation for Russia, as may be seen by a glance at the map, at the successful beginning of the East Prussian and Galician campaigns after a month of war. Only in the extreme western point of the Polish salient had Russian soil been seriously overrun. Here German troops from Silesia poured across the frontier near Kalisch and seized the Polish mining districts, but did not for the moment advance far toward Warsaw. The atrocities which they committed, similar to those in Belgium but less known, did not make them any more beloved by the already bitter Polish population. The Grand Duke Nicholas, on the contrary, made a successful bid for Polish loyal support by a proclamation on 15 August, promising the Poles reunion and home-rule: "Poles! The hour has sounded when the sacred dream of your fathers and your grandfathers may be realized. A century and a half has passed since the living body of Poland was torn in pieces, but the soul of the country is not dead. It continues to live, inspired by the hope that there will come for the Polish people an hour of resurrection and of fraternal reconciliation with Great Russia. The Russian army brings you the solemn news of this reconciliation, which obliterates the frontiers dividing the Polish peoples, which it unites conjointly under the sceptre of the Russian tsar." The real fate of Poland, however, was not to be decided at once by any choice which the Polish people might make as between Russian and Teuton. It was to be decided by the ultimate fate of the vast contending armies which were about to strike one another to the north and the south of the Polish salient in East Prussia and Galicia and the vaster armies on the battlefields of France.

3. The Russian Invasion of East Prussia (August–September 1914), and the Battle of Tannenberg.— The Germans had not expected that Russia would attempt to invade East Prussia almost immediately after war was declared. They had counted, and counted too confidently, upon the supposed slowness of Russian mobilization, upon the inadequacy of the Russian railways, and upon the vast distances over which Russian troops would have to move to reach the German frontier. The whole German strategy was based upon the concentration of a crushing force which should annihilate French resistance. After that, Germany could turn eastward to deal with Russia at her leisure. Therefore Germany did relatively little for the protection of her East Prussian frontier. The number of German troops east of the Vistula was not greatly increased during the first three weeks in August, and probably did not exceed four corps, that is, less than 200,000, half of whom were first-line troops (the 1st corps at Koenigsberg and the 20th at Allenstein) and the rest Landwehr. In addition to these four corps there were several cavalry divisions and a large force of motor cyclists. The latter were particularly valuable for moving rapidly through the long stretches of forest and moor country to defend quickly the narrow necks of land between the innumerable lakes. Aside from the first-class fortress of Koenigsberg, which was the centre of defense, and the fortified areas of Memel and Dantzig, which like Koenigsberg, could receive provisions and reinforcements by sea, if besieged, there was only one other fortress in East Prussia. This was Fort Boyen, at the eastern end of the Masurian lakes, opposite Suwalki. But even this fortress did not play an important part in the war. It was not in

fortresses that the Germans put their trust, but in armies and in the nature of the country. The whole southern part of East Prussia, known as the Masurian Lake Region, is an almost impassable line of defense. It is covered with a tangle of forests, swamps, ponds and lakes, through which a few good roads run. To one who knows thoroughly the paths and connecting necks of dry land, who knows which ponds have a hard bottom and are fordable, and which are a bottomless slime, who knows how to go blindfolded through the dark forests, it is not impossible to lead an army through. There was one man in Germany, an obscure general in retirement, who knew all this, Paul von Hindenburg.



Some years before the war a land company of promoters had proposed to reclaim this region for agriculture. Hundreds of square miles were to be cleared of forests. The lakes and swamps were to be drained and the wild country turned into prosperous farms for German peasants. Von Hindenburg energetically opposed the reclamation scheme. It is said he hurried to Berlin and interviewed the kaiser in person; he pointed out that this eastern wilderness was worth to Germany many army corps and a dozen fortresses. Why destroy the defense which Nature had provided and throw one of the oldest provinces of the Prussian monarchy open to easy Russian attack? His arguments prevailed and the wilderness remained.

To the east and west of the Masurian Lakes, however, near the Kovno-Koenigsberg and the Warsaw-Dantzig railways, the ground is higher and better suited to military operations. Here the German government had encouraged the peasants to build houses of stone with very heavy loop-holed walls toward the Russian frontiers. They were practically block-houses and did the Germans some good service in checking the advancing Russians. They were proof against the only light artillery which the Russians were able to bring up. But even after the Russians had captured them they were no great shelter to the invaders, because the walls on the German side were thinner and afforded no protection against German artillery. Many of these block-houses were also connected by secret underground telephones with stations further to the west, so that after Russians had advanced, German spies were able to send information of their movements. Very few defense trenches had been dug by the Germans, and most of their barbed wire was still stacked up in coils when the Russians made their first invasion.

The speed with which Russia mobilized came as a surprise and shock to the Germans in East Prussia. On 3 August, only two days after the declaration of war, the German garrison in Memel, on the Baltic Coast, just inside the German frontier, was called upon to drive back a Russian detachment from Libau. A few days later Russians did actually occupy Tilsit on the lower Niemen, where a century before Napoleon and Alexander I had met to divide the world between themselves. Another indi-

cation of the speed with which Russia moved may be seen in the fact that Gourko's cavalry division, which in peace time had its quarters in Moscow, was mobilized and transported so rapidly and efficiently that it was able to detrain at Suwalki on 6 August and to cross the frontier before daylight on 11 August. It pushed on quickly to Marggrabowa on the German strategic railway, cut the line, destroyed the station and telegraph and telephone wires and seized valuable information as to the German plans and the location of troops. These cavalry patrols, sent forward to reconnoitre the situation, were speedily followed by the two main Russian armies which were to invade East Prussia — the army of the Niemen under General Rennenkampf and the army of the Narev under General Samsonov.

The 1st Army under Rennenkampf was to move rapidly westward from the Niemen along the line of the Kovno-Koenigsberg Railway, where the ground was good. It would drive back the smaller German force opposed to it and threaten Koenigsberg from the east. The 2d Army under Samsonov, moving northwest from the Narev and Bug rivers, between the railways running into East Prussia from Bialystok and Warsaw, would advance more slowly through the difficult country of the western half of the Masurian Lake Region. Having passed this barrier it would reach the main-line railway from Berlin to Petrograd, which passes through Eylau and Allenstein. It would then be on good ground, would join up with the 1st Army, and together the two armies could close in on Koenigsberg; or leaving Koenigsberg besieged they could advance to the Vistula and menace Berlin. For three weeks all went so successfully that Russian hopes ran high. On 27 August, in anticipation of victory, a fête was held in Petrograd, and by the sale of flags $100,000 was raised to be given to the first Russian soldier who entered Berlin. But 27 August marks the high-water mark of the East Prussian venture, as one may see by following a little more closely each of these armies.

General Rennenkampf had under his command the four army corps whose regular headquarters were comparatively near the frontier — the 2d (Grodno), the 3d (Wilna), the 4th (Minsk) and the 10th (Riga); he had also the 1st and 5th rifle divisions and Gourko's cavalry division. By the end of August he had also the support on his left flank of a new 10th Army under General Pflug, composed of two of the best-trained army corps — the 22d (Finland) and the 3d Siberian — two divisions of the famous Cavalry Guards from Petrograd, and six less well-trained divisions of reserves (53d, 54th, 56th, 57th, 72d and 76th). But not counting these later arrivals, Rennenkampf had in the army of the Niemen nearly 200,000 of Russia's best troops. He, therefore, considerably outnumbered the Germans under von François. He accordingly pushed rapidly across the frontier with his main force about 10 August and occupied Stallupoenen, the station just inside the Prussian frontier, where the strategic railway parallel to the frontier crosses the main line from Berlin to Petrograd. Fifteen miles farther west, at Gumbinnen, the Germans felled thousands of trees to make an abattis for their hastily constructed trench positions. They hoped thereby to protect Insterburg, 10 miles farther west, where the main-line railway crosses the Pregel. Insterburg was important strategically, both as a railway centre and as an outpost for the defense of Koenigsberg, the capital of the province. But on Sunday, 16 August, Rennenkampf bombarded Gumbinnen effectively. Then, in a dashing frontal attack, he rushed the German positions. A Russian flanking movement aimed at the Insterburg Railway caused von François to give up the trenches in front of the town on 20 August. The Germans fell back as hastily as possible to the cover of the heavy protecting guns of the circle of forts around Koenigsberg, where they were shut in. A Russian detachment had already occupied Tilsit on the lower Niemen and the tsar's flag was hung out from the ancient town hall, where it fluttered triumphantly for three weeks. By the fourth week in August, about the time the English were beginning the retreat from Mons, Rennenkampf had successfully occupied more than a third of the sacred soil of East Prussia.

Having reached the outskirts of the Koenigsberg forts, however, Rennenkampf was brought to a halt. He had begun to feel the lack of organization in his rear and the difficulty of bringing up supplies of munitions and other military material. There was, to be sure, much food and fodder in this rich agricultural region of highly scientific farming, which stirred the admiration of the Russians. And this food was requisitioned wherever the retreating Germans had not been able to set fire to the barns bursting with the recently harvested grain. Nevertheless, to advance beyond Koenigsberg without waiting for the organization of railway support from Russia, Rennenkampf rightly judged would be hazardous. He could not safely move too far in advance of the reserves which would soon be coming up from the mobilization forces in the interior of the Russian Empire. He could, moreover, afford to halt, in order to wait for, and link up with, the 2d Army, under Samsonov, coming up from the south.

The first news from Samsonov's army had been wholly favorable. He crossed the frontier and was advancing slowly but steadily through the Masurian Lake Region. He had even taken a good many prisoners. By 27 August his leading columns had reached the main-line railway at Allenstein, a considerable town of 40,000 inhabitants, with military barracks and machine shops. There he ordered the inhabitants to produce a stated amount of food and provisions in the market place at 8 o'clock of the following morning. Then suddenly all news from him stopped. No communication could be had either with Samsonov or with any of his staff. After waiting two days in anxiety the commander-in-chief, Zhilinsky, sent orders to Gourko's cavalry division, which was attached to Rennenkampf's left flank, to make a dash through the enemy's line toward Allenstein to get evidence of the condition and whereabouts of Samsonov and his army. Though this was an extraordinary order and a very perilous mission, and though his troops were weary from patrol work, Gourko did not hesitate for a moment. Starting long before daylight on

the morning of 30 August with three regiments of cavalry and one battery of mounted artillery, he crept through the German lines between Koenigsberg and the eastern end of the Masurian Lakes, which were still held by the Germans. Then he rode for 30 miles behind the German lines, tearing up railways which he crossed and blowing up bridges. Soon after noon he was able to see with the naked eye the buildings and barracks of Allenstein, and found strong forces in front of him. He called up his battery and opened fire on the German reserves, but speedily became convinced that he was face to face with greatly superior numbers, and that it would be folly to try to force his way into the town of Allenstein. He thought for a moment of firing a few rounds from his artillery into Allenstein, but unwilling to harm the peaceful civilian inhabitants, he refrained. Had he but known it at the time, the German army headquarters staff was at that moment in the town, and he might have done it incalculable damage. But he now decided it was high time to make his way back and report on what he had learned. He could hear heavy firing to the south. But he could not get into touch with any of Samsonov's troops, though he had expected to find them near Allenstein. His scouts had brought information that several German dead had been found lying about on the ground, showing that evidently Samsonov's men had been fighting very recently in this neighborhood. Under the circumstances, he felt that he had done all that was possible and that he ought to bring back quickly such information as he had gathered. The Germans were lying in wait for him on his return, but by choosing a slightly different route and under the cover of darkness, he managed to rejoin the Russian lines south of Insterburg, having lost only a few men who were shot in the dark from a German ambush. He found that during his 24 hours' absence Rennenkampf's army had begun to retreat to the east. He learned also that at dawn on 30 August, only a few hours after he had started for Allenstein, a second message had come from General Ghilinsky countermanding the order for the dash through the German lines. This counter-order had been sent to overtake Gourko, but it was impossible to reach him. On 30 August Gourko had ridden over 60 miles, and displayed the same keen judgment, tact, thoughtfulness for others and general ability which were to win him rapid promotion to be commander of the 6th Army in November 1914, chief of the Russian imperial staff in November 1916 and commander-in-chief of the whole Eastern Front in March 1917. No more delightful and informing book on the Eastern Front has appeared in English than his 'War and Revolution in Russia 1914–1917' (London 1919), from which the account in the preceding paragraphs is summarized. The explanation of the two days' silence from Samsonov, of the order to Gourko to dash behind the German lines to Allenstein, of the heavy firing he heard there to the south, followed by the countermanding of his orders and the eastward retirement of Rennenkampf's left flank, all lay in one tragic word — Tannenberg.

General Samsonov entered the war as a popular and highly-esteemed general. He had commanded the Siberian Cossacks with great distinction at the battle of Liao-Yang in the Manchurian campaign. He had a high reputation among Russian common soldiers. He had accordingly been given command of the 2d Russian Army which started north from the Narev River toward the western end of the Masurian Lakes soon after Rennenkampf crossed the Prussian frontier from the east. Like Rennenkampf's army, Samsonov's consisted of four army corps and several divisions of cavalry, i.e., nearly 200,000 men. It advanced on a front of about 20 miles toward the railway quadrilateral at the corners of which are the four Prussian towns of Eylau, Allenstein, Soldau (just south of Tannenberg) and Ortelsburg. Within this area are the swamps and forests of the western Masurian Lakes. Samsonov had placed the 13th and 15th Army corps in the centre with the heads of their vanguards in line and in close contact with each other. On the outside flanks of these central army corps, at a distance of about a half day's march and marching slightly to the rear, were the 6th Army corps on the right and the 1st Army corps on the left. It was understood that the main attack was to be borne by the two central army corps, whilst those marching slightly to the rear on the flanks were to serve as a protection from envelopment. In case the central army corps were held up by battle, the flanking corps could in their turn move ahead to get round the flanks of the enemy, which was holding up the two central army corps. But these plans, owing in part to tactical errors on the part of the corps commanders on the flanks, were never carried out. And in the end the two corps in the centre were left entirely without support. They were surrounded by a living wall of Germans and had no option but to lay down their arms and surrender, as the French had done at Sedan just 44 years before.

At first Samsonov had had unusual success in threading his way through the tangle of forest and lakes in the Allenstein quadrilateral. His cavalry patrols met with little serious opposition until 20 August, when he found the vanguard of the German 20th Army corps from Allenstein strongly entrenched in the centre of the quadrilateral in a line running from northeast to southwest. But using his artillery to cover the attack, Samsonov had his troops rush the German trenches with hand grenades and cold steel. After severe fighting, by noon of the next day, he had completely routed the Germans. Some fled toward Koenigsberg and some west toward the Vistula. The Cossacks pursued with vigor and took many prisoners. Samsonov then pushed rapidly forward and on 27 August was able, as we have seen, to occupy the town of Allenstein. Its citizens were ordered to supply 120,000 kilograms of bread, 6,000 kilograms of sugar, 5,000 kilograms of salt, 3,000 kilograms of tea and to have them ready in the market place by eight o'clock on the following morning.

By this time the victorious advance of Rennenkampf and Samsonov had virtually put out of action the first field army of East Prussia; all that was left of it was either in retreat or was being shut up inside the Koenigsberg lines. The Russian patrols were advancing toward the Lower Vistula. Panic-stricken fugitives, with wild stories of universal burnings and slaughters, were beginning to arrive in Berlin, spread-

ing general consternation throughout Germany. At the same moment on the Western Front fugitives fleeing from von Kluck's army were beginning to arrive in Paris. It was clear that the German authorities had miscalculated the whole eastern situation and that something must be done, and done quickly, to save East Prussia.

For the Germans there were many reasons why East Prussia must be freed from the invader at once, if possible. If the panic-stricken fugitives from the regions east of the Elbe were allowed to spread through Germany they might dampen German spirits and weaken German morale, despite the apparently extraordinary German victories in Belgium and France. From a strategic point of view no German advance in Poland was possible so long as Russians stood in East Prussia on the northern flank of the Polish salient. Moreover, a great part of the officers in the German army came from the Junker families, with estates in the invaded region, which they were keen to recover. Sentimental reasons also urged the immediate deliverance of the sacred soil of East Prussia; for this was one of the oldest provinces of the Hohenzollerns. It had been conquered by the blood and sweat of the Teutonic Knights nearly 700 years ago. It was the cradle of the Prussian monarchy, and in the capital Koenigsberg, a Brandenburg elector had first placed on his head the royal crown. To the kaiser it came as a personal affront that his hunting lodge in the forests at Rominten, where he used to spend some weeks every autumn, should be desecrated by Cossack bands. For these reasons the German general staff ordered at once the concentration behind the Vistula of a relieving force, made up probably of reserves drawn from central Germany, and not, as Gourko frequently asserts, from troops taken from the Western Front. It speaks highly for the kaiser's intelligence, or for the excellence of the German military machine, that he was able to pick out of obscurity and retirement to command this relieving army, the one man in all Germany who was probably best capable of coping with the critical situation.

Outside of a small military circle in Germany Hindenburg was practically an unknown man when the Great War broke out. Born of an old Prussian military family, near the middle of the 19th century, he received at the age of 18 a lieutenant's commission in the Prussian War against Austria in 1866. In 1886 he was promoted to the position of professor in the War Academy and lectured for several years on applied tactics. As he had meanwhile been a staff officer at Koenigsberg and became interested in the problem of the defense of East Prussia, it was quite natural that in his lectures he gave much attention to the Masurian Lake Region. He worked out theoretical battles there with his students, and so came to have a perfect theoretical as well as a good practical knowledge of the region where three of his greatest battles were to be fought. He never wasted time, as so many German officers were accustomed to do, in playing cards and idling. He is said to have boasted that he never read a poem or any other literary work after the Franco-Prussian War. All his time was absorbed in military studies. In the evenings he would sit pondering over maps spread out before him, marking movements of troops, directing armies and fighting imaginary battles. In taking walks across country he would still play the soldier, ordering his boy to carry out evolutions with imaginary troops, or halting the family party on a ridge to unfold his plans for a battle there. It was his dream to lead an army corps against the enemy. But in 1911, having already reached the rank of commanding general and being 64 years of age but still in full strength and vigor, he resigned his commission, in order, as his brother has assured us, "to make room for the younger men." He retired to Hanover to live on his pension. When the war broke out he instantly offered his services, but after three weeks of waiting he heard nothing. Then on 22 August came a dispatch giving him command of the German armies in East Prussia — in the region which he had long studied and knew so well. He arrived by special train on the Eastern Front in the afternoon of 23 August and began at once one of those rapid concentrations of troops for a surprise attack for which he soon became so famous.

Hindenburg saw that the two Russian armies had not yet established touch with each other. There was still time to strike them separately, first Samsonov and then Rennenkampf. Accordingly he drew in with all possible speed the troops in front of Rennenkampf and massed them against Samsonov's columns, advancing into Allenstein on 27 Aug. At the same time he sent the greater part of the fresh forces which he brought from Germany southward on the railroad from Eylau toward Tannenberg to crush in Samsonov's left flank. These German troops attacked before Samsonov's supporting column could come up to afford protection to the two central columns. By this unexpected attack Samsonov's whole left flank was bent back and thrown into confusion. Some effort was made by the Russians to retrieve the situation under the supposition, false as it soon turned out, that this first attack from the west toward Tannenberg was the main German attack. But meanwhile Hindenburg had shifted a large part of his troops around the edges of the quadrilateral through Eylau and Allenstein to Ortelsburg. Here from the east they attacked and crushed in Samsonov's right flank which had been left as unprotected as his left flank.

By the evening of 28 August Samsonov's position was desperate. The head of his two central columns had been driven back from the neighborhood of Allenstein where Gourko in his ride behind the German lines found only scattered dead. The sides of the central columns had been crushed in by Hindenburg's two attacks from the west and the east, and his rear was being enveloped by an encircling movement of German troops who were cutting off all chance of retreat. The two outside corps which were to have protected his flanks had not appeared, and in fact he had lost all touch with them. Thus surrounded, the 80,000 men of the two central corps were driven in upon themselves into the shades of Tannenberg wood, absolutely helpless and unable to use their artillery. In the swamps and forests they fought desperately, but without any possibility of find-

ing their way back to the Russian frontier. By 31 August practically all of the Russian soldiers in the two central corps, aside from those who were drowned or killed, had to lay down their arms and surrender, and Samsonov himself perished in the rout. The first German reports gave 30,000 as the number of Russian prisoners taken in the battle of Tannenberg, but by the end of August the number had risen, with but slight exaggeration, to 90,000. Hindenburg's victory was so immense that the German official reports were at first received with incredulity abroad, but fuller details only confirmed the magnitude of Russia's disaster. Tannenberg was the most complete and decisive victory which the Germans won in the whole war. Hindenburg sprang at once from the obscurity of a general in retirement into the position of the greatest German hero of the war, and his fame was deserved; for he had outmanœuvred his enemy and made the best use of all the means at his disposal.

On the Russian side Samsonov did not survive the battle for whose loss he was in part to blame. He had made the mistake of advancing the headquarters of the central corps even though he was entirely without information as to the movements of the corps on his flanks. He had supposed they would hold in check any enveloping or flanking movement which the Germans might attempt. In reality these corps on the flanks were never in proper close touch with the two central corps (for which failure the army commander, Zhilinsky, was in part responsible) and instead of checking Hindenburg's troops, they began to retreat to Russia as soon as they felt strong German pressure.

During the battle they not only failed to give support to Samsonov's two central corps, but they did not even keep him informed of their movements. Several times during the battle of Tannenberg, Samsonov had inquired anxiously if any news had been received of the corps on the flanks. Each time the answer was in the negative. Samsonov was in part to blame for moving his headquarters so far to the front that he infringed one of the elementary rules of military strategy, that which provides that the commander of an army shall choose as his headquarters some spot where information can be readily brought to him and whence he can communicate with all the forces under his command.

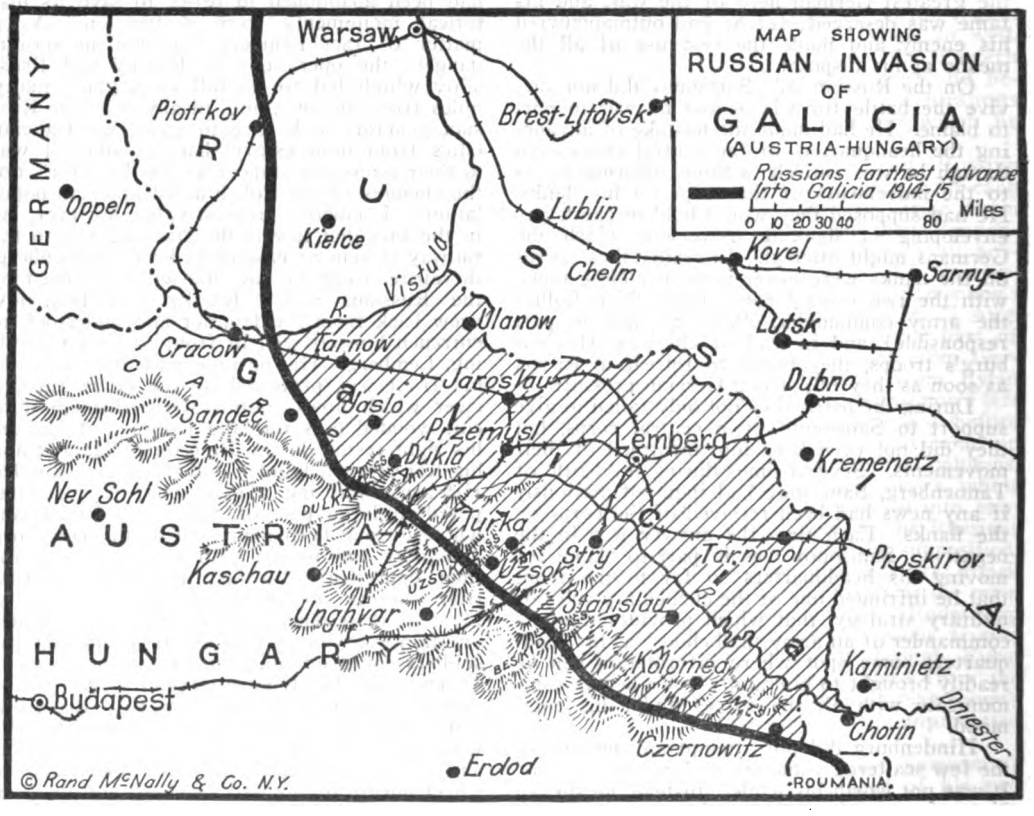
Hindenburg did not attempt any pursuit of the few scattered remnants of Samsonov's army. It was not worth his while. Instead, he shifted his troops rapidly to the northwest to try to cut off Rennenkampf's army and envelope it, just as he had enveloped Samsonov's. Rennenkampf, on learning of Samsonov's catastrophe, should have prepared to retreat at once; but he hesitated. He declined to admit at first that the disaster at Tannenberg had rendered his own position untenable, and sealed the fate of the Russian invasion of East Prussia. But as it began to be clearer that Samsonov's army was annihilated, and as reports began to come in of increasing German forces threatening his own left flank and line of retreat, he seems to have completely lost all self-control. He at last gave orders for the retreat which should have been given earlier. Then he fled in a motor-car for the Russian frontier, leaving his forces to get through the hazards of their difficult retreat as best they might. His army lost 30,000 in prisoners before it could reach its line of defense in Russia. Such was the humiliating end to the Russian invasion of East Prussia.

4. The Russian Occupation of Galicia, August–September 1914.— Lemberg is the most important city in Galicia, the administrative capital of the province and a populous commercial centre. It boasted of three famous cathedrals, a university and a library which contained unique treasures of Polish history and literature. For many centuries it was a strongly walled city, but of its old defenses nothing remained in 1914 but the citadel, an obsolete fortress without military value. When Lemberg fell, the Austrian government, seeking to minimize its loss, explained that the city had been abandoned in order to save its historical monuments from destruction. As a matter of fact Lemberg was not in serious danger; the operations of Russky and Brussilov which led to its fall took place many miles from the city; and, in any case, the Russian generals took care to spare the Galician cities from unnecessary damage, since it was to their interest to appear as the deliverers, not the enemies, of the Polish and Ruthenian populations. Lemberg's greatest value, however, lay in the fact that it was the strategic key to the railway system of eastern Galicia. Auffenberg, therefore, when he saw himself threatened by the Russians under Russky and Brussilov, drew back from the frontier and undertook to entrench himself well in front of, and protecting, Lemberg. His position was a strong one: his front was protected by the Gnila Lipa, a river which flows southwesterly through difficult wooded hills into the Dniester at Halicz; his right rested on the Dniester at Halicz; and his left stretched north toward Rawa Russka. His army was not a good one; it was composed in large part of Slavs and Rumanians who had long been oppressed by the Hapsburg monarchy and fought with no enthusiasm for their oppressors. In fact, for them an Austrian defeat might 'mean political liberty. Most of their officers were Austrian Germans, or Magyars, who gave orders in a language the soldiers could not understand.

The fight for Lemberg began at the end of August 1914 and lasted a week. Brussilov, after two days of fierce fighting, threw his left wing across to the south bank of the Dniester and occupied Halicz. He was then able to wheel northward toward Lemberg and drive in on Auffenberg's exposed right flank. On 1 September the rest of Brussilov's army, under Radko-Dmitriev, carried the line of the Gnila Lipa, while Russky, farther north, drove back the Austrian left wing. By so doing, Russky was able to interpose his Russian troops between Auffenberg's communications, and was beginning to encircle Lemberg from the north. With both wings driven back in a curve about Lemberg, Auffenberg's position became perilous. It began to be like that of Samsonov at Tannenberg. But unlike Samsonov, the Austrian saw his danger in time. Early on Thursday morning, 3 September, he decided to abandon Lemberg. He retreated to Grodek, a more defensible position 16 miles to the west, on the railway from Lemberg to Przemysl; but he was hard pressed by the Cossacks. His

machine-guns, abandoned with their ammunition, were turned against the fleeing Austrians by the pursuers. His demoralized men threw away equipment which could not be easily replaced. Soldiers of Slavic or Rumanian speech, who had no love for their Austrian and Hungarian officers, took the opportunity to desert by thousands to the Russian side. By his retreat from Lemberg Auffenberg lost 100,000 in prisoners alone, a great number of guns, vast stores of munitions, and the control of the great oil wells in eastern Galicia near Kolomea and Stryj.

At Grodek a chain of lakes and hills running north and south gave the Austrians a strong position in which to make a stand and recover themselves — provided their flanks were without any natural or artificial defenses. It was a serious gap in the Russian defensive line, and it is significant that it was through this gap east of the Vistula that Hindenburg penetrated successfully in 1915 after he had failed in three attacks on Warsaw from the west side of the Vistula. Advancing through this gap at the end of August 1914, Dankl was threatening to cut the Kovel-Lemberg Railway and then attack Brest-Litovsk. The Grand Duke Nicholas, however, though handicapped by Russia's slower mobilization and inadequate railways, had been able to push forward General Evart's army in time to check the Austrians before they reached Lublin or Cholm or the connecting railway. After Auffenberg's retreat from Lemberg, Dankl in turn found himself



safe. Russky quickly saw that a direct frontal attack on the Grodek position would be costly in men and time. Instead of a direct attack he could better accomplish his purpose — the capture or forced retreat of Auffenberg's army — by a wide sweeping movement around Grodek to the north, which would bring him in on Auffenberg's rear between Grodek and Przemysl. This flanking movement, however, brought him into conflict with the Austrian army under Dankl, and led to the fierce fighting commonly known as the battle of Rawa Russka 6–10 Sept. 1914.

This Austrian army under Dankl, at the outbreak of the war, had crossed the San and advanced northeastward between the Vistula and the Bug rivers in a flat country which was in a perilous position. His right flank and his communications to the San River were seriously threatened by Russky who was advancing through Rawa Russka. Dankl might have sought to save himself in either of two ways. The more prudent would have been to fall back on the San and secure sure touch with Auffenberg well to the west of Lemberg. A bolder course, however, was to attack at once the army of Evart in front of him before it could be reinforced, disperse it and take Russky in the flank. He chose the bolder way. On 4 September he attacked toward Cholm. But the Russians were unexpectedly strong and the attack broke down. Thereupon the initiative passed to the Russians. Ivanov, who had come up from Kiev with more troops to strengthen

Evart's extreme right, struck heavily toward Krasnik and rolled back Dankl's left wing. Assisted by Radko-Dmitriev, Russky then completed Dankl's discomfiture by driving a terrific blow through Rawa Russka which dispersed in confusion the remnants of Auffenberg's left wing, and compelled Dankl's isolated troops to retreat in haste across the San toward the protecting fortresses of Przemysl and Cracow. Such was the battle of Rawa Russka which completed the Russian success at Lemberg and opened all Galicia to Russian invasion.

The loss of Lemberg opened the way for Brussilov to the Carpathian passes and to Hungary; and it made possible the extraordinarily rapid Russian advance toward Cracow along the two main railways which run west from Lemberg by way of Jaroslav to the north and by way of Przemysl to the south. Cracow is the key to Vienna through the Moravian gap where the Carpathians flatten out, and to Berlin through the valley of the Oder River. Once in possession of Cracow, Russia might hope to strike a Napoleonic blow at either of the Teutonic capitals. A Russian invasion of the Hungarian Plain through the Carpathian passes would endanger the transportation of the invaluable oil supply which Germany was buying for her vast automobile transport service; for the oil wells of neutral Rumania were now the only considerable source of oil left to the Germans after their loss of the Galician supply. Politically also such an invasion of Hungary would gravely embarrass Austria; for the dominant Magyars in Hungary cared little for the Dual Monarchy, but much for their own independence. With their regiments badly disorganized at Lemberg and Rawa Russka and the sacred soil of Hungary trodden by the Cossacks, they might become dangerously lukewarm in their allegiance to the Teutonic Alliance. It was this political danger after Lemberg which made Germany assume an ever-increasing control over the direction of the Austrian forces and ultimately forced her to transfer to the Eastern Front some of the best German divisions, although they were sorely needed in France. After Lemberg, accordingly, Hindenburg virtually took over the supreme command from the Archduke Frederick and his chief-of-staff, Hoetzendorff, who were partly responsible for the Lemberg disaster. They had made the strategic mistake of dividing the two Austrian armies in such a way that they advanced on divergent lines and were opened to Russky's quick thrust between them. They had also underestimated the speed with which Russia could mobilize and advance to the frontier. Dankl and Auffenberg also fell under a cloud and had to accept the direction of German staff officers assigned to their armies. The change not only gave Austria abler leaders, but it gave an even greater unity to the strategy with which the Central Powers conducted the war — a unity which was still sadly lacking in the unco-ordinated actions of the Allies on the Eastern and Western fronts.

To repair her losses in Galicia, Austria had speedily to recall from Alsace four of her best army corps which she had too confidently consented to send to the Western Front. And in Serbia also she was forced to abandon the offensive and draw behind the frontier the remnants of another army which had been defeated at the Jadar River (23 August). It may be noted that the Austrian defeats at Lemberg and Rawa Russka coincided with German repulses and retreat at the Marne. Except for Samsonov's unhappy disaster at Tannenberg, the second week in September would have seen all the armies of the Central Powers in retreat or rout. Had Tannenberg not released Hindenburg's army, it would have been from her trenches in the West that Germany would have had to draw army corps to repair the Galician situation. In the fall of 1914, however, she was content to use mainly the troops already on the Eastern Front. She relied on the effect which she hoped Hindenburg could secure by moving these troops rapidly along Germany's frontier railways for attacks on Warsaw. Before turning to these attacks on Warsaw, the Russian advance toward Cracow, following the battles of Lemberg and Rawa Russka, may be briefly related.

After Lemberg and Rawa Russka there was no pause in the Russian advance toward Cracow. This great Austrian fortress was the main strategic objective of the Russians, who now made some shifts in the commanders. Russky, who had commanded so brilliantly at Rawa Russka and was noted for his strategic ability, was shifted to the command of the Warsaw area. Here, at the centre of the great Russian Front, which now extended nearly 900 miles from East Prussia to the Carpathians, he at first merely flung out Cossack patrols west of Warsaw toward Lowicz and Lodz, but kept the main part of his troops east of the Vistula. Meanwhile Ivanov began to devote his whole attention to directing the Southern Army Group advancing through Galicia toward Cracow. Ivanov himself personally commanded the army which formed the right wing, Radko-Dmitriev commanded the centre; and Brussilov still had charge of the left wing. Making use of the great amount of Austrian rolling stock captured at Lemberg, Ivanov moved his infantry rapidly westward along the main railway in northern Galicia and captured Jaroslav on 23 September. This fortress was surrounded by 20 redoubts and had been expected to offer a stout resistance. Its capture was an important gain for Russia, because, in addition to being a considerable city on the main railway, it controlled a branch line running 20 miles south to the even greater fortress of Przemysl. Jaroslav offered, in fact, an excellent base for the investment and siege of Przemysl from the north. Przemysl also was a first-class modern fortress surrounded by a strong group of outlying concrete forts and by a further defense line of entrenchments and fortified positions. It sat astride the Upper San, and, being on one of the main lines from Lemberg, it controlled supplies going east or west. In it had been accumulated a huge quantity of ammunition which was to have served as Auffenberg's reserve supply. Its ordinary garrison was 30,000 men, but it was increased by 100,000 more of Auffenberg's retreating men who sought safety behind its walls — in violation of the military maxim that "a fortress should be defended in the field." As the danger of a siege became likely, some of the civilian inhabitants were sent out of the city, but it soon appeared that there were still far too many

mouths to be fed. Przemysl was also strategically important in relation to the Carpathian passes. South from the city, ran a railway which split into two at the watershed between the San and the Dniester, the western branch running through the Lupkow Pass, and the eastern branch running through the Uzsok Pass to join the network of railways in the Hungarian Plain. Przemysl was, therefore, a strategic point of utmost importance, to which the Austrians should have been able to send reserves from Hungary. They were only prevented from doing so by the speed with which Dmitriev and Brussilov struck westward after the fall of Lemberg.

Dmitriev, pushing westward north of the Dniester along the Lemberg-Sambor Railway, succeeded by 23 September in shutting off Przemysl on the south, just as Ivanov, by capturning Jaroslav, was preparing to shut it off on the north. Not caring to risk the loss of life and the delay which would have been involved in an attempt to take the fortress by assault, Dmitriev left part of his infantry to sit down before Przemysl and starve it into submission. Having thus masked the fortress, he joined the rest of his forces to Ivanov's and continued to press westward along the railway toward Tarnow and Cracow. On 29 September his cavalry was at Dembica, only a hundred miles from Cracow.

Meanwhile Brussilov, at the extreme southern end of the Russian Front, occupied Stryj and pushed forward so rapidly toward the western Carpathians that he was able to seize the Dukla Pass on 28 September. His Cossacks even penetrated a short distance into the Hungarian plains. By the end of September, the Russian advance in Galicia seemed irresistible; the gateway into Hungary was opened; the fall of Przemysl was momentarily expected; and it seemed that Cracow would soon be reached.

At this moment Hindenburg came to the rescue of Austria. He began the first of his great strategic attacks on Warsaw which were meant to place the Germans east of the middle Vistula and thereby force a Russian retirement from western Galicia. For, if the Russians were driven out of Warsaw and forced back toward Brest-Litovsk, it would be unsafe to have the Russian left wing in Galicia protruding so far beyond the Russian centre. Ivanov and Dmitriev would have to draw back to the San or the Bug to align themselves with Russky's centre. This was the aim of Hindenburg's three successive assaults on Warsaw, in grand Napoleonic style, in October and November 1914. Though he failed each time to take Warsaw, he partly succeeded in checking the Galician advance and in preventing the transfer of troops from the Russian centre to the Russian left. This is the simple explanation of the apparently confused movements in western Poland in the fall of 1914. If kept constanly in mind one may easily follow the three assaults on Warsaw and note their interrelation with events in Galicia.

5. Hindenburg's Frontal Attacks on Warsaw, October–December, 1914.— Hindenburg had the invaluable military quality of giving up a plan quickly the moment he was convinced that it was not likely to succeed. Instead of holding on doggedly to a doubtful effort, he would quickly work out and put into operation some new scheme which would surprise the enemy in another quarter. In his supreme attacks on Warsaw, he was able to use the network of railways which run around on the German side of the frontier to move troops back and forth around the edges of the Polish salient in the great arc from East Prussia to Cracow. The Russians had no good air service and could not learn of these movements until they were well advanced, and when they learned, their transportation service was so poor in Poland that it was difficult for their troops to move quickly to the threatened area. Though the Germans moving on outer lines always had many more miles to travel than the Russians, moving on the inner lines, nevertheless Germany's strategic railways always gave Hindenburg a great advantage. But if his surprise attack did not succeed quickly it was doomed to failure, since the delay would give the Russians time to concentrate a sufficient number of troops for the defense. A quick surprise attack, by shifting troops on the strategic railways, is the key to Hindenburg's three frontal attacks on Warsaw, as it was the main factor in his great victory at Tannenberg.

Assistance to the Austrians in Galicia and Hungary, though the main, was not Hindenburg's only, motive in trying to take Warsaw. This city, with its population of three-quarters of a million, was the administrative and historic capital of Poland. If he could occupy it, the Poles, who were not enthusiastic for Russian domination, might yet be won over to the Teutonic League by a promise of Polish independence; or a revived Poland might be brought indirectly under German control, by the establishment of a German prince as king of Poland. If such political aims proved impossible, at any rate Warsaw would form ideal winter quarters for the German army. Possessing three bridges across the Vistula and being the centre of the Polish railway lines, such as they were, Warsaw would form an excellent advanced base, far in the enemy's territory, from which an advance could be made in the spring to Russia's Brest-Litovsk line of defense. The capture of Warsaw would put the Germans east of the Vistula, deprive Russia of this great river as a line of defense and render untenable the Narev-Bobr line of fortresses. East Prussia, as well as western Galicia would then be relieved from further danger from a Russian invasion. How did Hindenburg propose to take Warsaw by a frontal attack from the west?

By 1 October Hindenburg had decided that he could not break through the Niemen line of defense. He, therefore, withdrew from the Kovno-Grodno front to positions within the East Prussian frontier, where he left only a few troops to serve as a screen. No large number was necessary to protect this frontier, because he could bring the main body of his troops back again quickly by rail if the Russians should make any considerable attack — just as he had done at Tannenberg. Furthermore, Prussia was «self-contained» since the lakes, swamps and forests made it difficult to operate in the whole region from the Masurian Lakes to the Niemen.

By 5 October he had shifted the bulk of the German forces in East Prussia by rail

around the frontier of Silesia, and was advancing with incredible rapidity along the railway line from Kalisch toward Lodz and Warsaw. To his East Prussians he had joined additional troops from central Germany, though probably not from the Western Front, as General Gourko supposes ('War and Revolution in Russia,' pp. 90, 100).

By 16 October the main German force had reached the outskirts of Warsaw and begun the great three days' battle for its possession. German dirigibles and aeroplanes flew over the city dropping bombs in the direction of the main railway station on the east side of the Vistula. They did little material damage, but they caused a panic among the inhabitants and even among some of the Russian soldiers who saw these monsters of the sky for the first time. Then came showers of propagandist leaflets in Polish, Hebrew and Russian, promising Polish autonomy and making all sorts of religious and racial appeals. One pamphlet designed for Polish Roman Catholics bore a colored picture of the Virgin and Child, flanked by medallions of the Pope and the kaiser, that versatile believer who elsewhere was being represented as a convert to Mohammedanism — it was at this moment that Enver Pasha decided to bring Turkey into the war on the side of Germany. To co-operate with the main force at Warsaw and to concentrate as great a force as possible at the point of attack, Hindenburg sent a smaller army from Thorn up the west bank of the Vistula toward Lowicz and Warsaw, but it moved slowly and was checked by Rennenkampf who hurried troops from the Niemen front and prevented it from taking part in the assault on Warsaw. Hindenburg had also ordered forward a strong body of Austrians, strengthened by German troops, who were to advance from Cracow by way of Kielce and Radom. They were to take the fortress and railway junction at Ivangorod, and then cross the Vistula where the river narrows at Josefov south of Ivangorod.

When the Grand Duke Nicholas perceived the nature of this concentration of Germans and Austrians moving from southwest Poland toward the Vistula, he took no chances. He resolved to run no risks on the plains west of the Vistula, where he would have to rely for supplies on divergent railway lines, and where the broad and muddy Pilica would cut his army in two. On the whole Russian centre he called in behind the Vistula all of Russky's troops except a screen of cavalry, keeping in touch with the enemy and bodies of entrenched infantry protecting Warsaw and the Ivangorod bridgehead. In Galicia he ordered Ivanov to abandon the advance on Cracow, to retire behind the San to form the alignment of the centre, and to send some of his troops to strengthen the centre. Ivanov's retirement necessitated for a moment the relaxing of the siege of Przemysl. Hindenburg's threat at Warsaw thus enabled the Austrians to force an opening on the west side of Przemysl and to pour provisions into the fortress. But it was only for a moment. A few days later Dmitriev again enclosed it tightly and kept it closed until it was starved into surrender six months later.

To return to the assaults on Warsaw and Ivangorod (15–19 Oct. 1914). Warsaw, from the Russian standpoint, lies on the wrong side of the river — the left or west side. But it was defended by a circle of 11 outlying forts, some six to eight miles distant from the city itself. Fortunately the railways merely skirt the city and cross to the Praga suburb on the east side, where is situated the main station to which converge the railways from all Russia. If necessary, the Russians could abandon Warsaw, blow up the three bridges across the river to Praga, and yet not lose control of the all-important Praga Railway terminal. But as it turned out, Warsaw did not have to be abandoned in 1914. Just as Hindenburg was furiously assaulting with superior numbers the outer trenches and forts west of the city, new Russian troops were beginning to arrive from the far corners of the empire. The famous Siberian Rifle regiments, after nearly a month's weary journey in closed freight cars, were rushed from Praga through the streets of Warsaw to charge the Germans with cold steel. They were the first instalment of eight full corps which came to Warsaw and Ivangorod within the next few days and represented the completed results of Russian mobilization. They were among the finest troops in all Russia, owing to the care with which they were selected and the considerable practice in actual warfare which they had had with nomad tribes on the borders of the empire. Their arrival saved Warsaw. After three days of furious fighting (16–18 October) Hindenburg saw that the city was not to be taken by surprise. It was not worth his while to sit down to a siege, for the Russian defenders daily grew in numbers while his own forces were limited unless help came from the Western Front, which he could not yet expect. Farther south, Ivangorod was defended in a spirited fashion by General Schwartz, who did not allow the enemy either to get their big guns within range or to take the bridge-head — the only bridge over the Vistula between Warsaw and Galicia. Still farther south, at Josefov, where the Russians were weak and had no railroad to support them, the Germans managed to throw over a pontoon-bridge and crossed with a considerable force to the right bank. But on 21 October Russky fell upon them at the little village of Kazimirjev, half-way between Ivangorod and Josefov. No German escaped back over the Vistula. Hindenburg then ordered a general retreat to the Silesian frontier, but Russky, crossing the Vistula in force, gave the retreating invaders no rest. In the wooded country and along the muddy banks of the Pilica, he attacked the Germans and Austrians, causing very heavy losses among the latter. As they retired toward Silesia, the Germans fought desperately and bravely, and by their rear-guard actions managed to protect their guns and marching columns of infantry. It was an orderly retirement, not a rout.

As the Germans advanced toward Warsaw, they took great pains to construct excellent communications: the broad-gauge of the railways was altered on the Kalisch lines to fit the narrow-gauge German rolling stock; causeways were built for the artillery, and great stretches of forest were felled by the engineers for corduroy roads for the automobile transports. If they were to spend the winter in Warsaw, the Germans wanted plenty of means for bringing up supplies, and good communica-

tions with Germany would be necessary for a further invasion of Russia in the spring of 1915. Now, however, at the end of October 1914 as Hindenburg retired, he demolished all the preparations of roadways as carefully and systematically as he constructed them three weeks before. He blew up all the railway stations, water towers and bridges. He was even said to have a machine which twisted steel rails into the shape of cork-screws. He blasted out great holes in the roads. The telegraph lines were cut and the posts sawed off. In short, the whole country of southwest Poland was thoroughly devastated so as to make it virtually impassable for an army. But the curious thing, not noticed at the time, was that the policy of devastation was carried out in west and southwest Poland only. In northwest Poland Hindenburg's troops took just as much pains to keep the communications good and the country free from devastation. Why this difference in Hindenburg's treatment of southwest and northwest Poland? Because he was already planning a second surprise attack on Warsaw, this time from the northwest. If the Germans struck a blow from the northwest, they would find favorable conditions for advancing, while the Russians would have no road or railway by which to return for the defense of Warsaw. Again, railroads, speed and surprise were the factors in a second attack on Warsaw which Hindenburg was planning, and the Russians unwittingly played into his hands.

Russky had been so encouraged by the failure of Hindenburg's first attack on Warsaw

that he made the grave mistake of following him too far to the west. He disregarded the original Russian strategic plan of not risking an advance of the Russian centre far into the Polish salient until the wings were in secure possession of all of East Prussia and Galicia. He did not even take warning from the ruined state of the country which Hindenburg left behind him in southwest Poland. In pursuit of the retiring Germans and Austrians, Russky had moved his whole army far west of the Vistula to the Warta River close to the Silesian frontier. His Cossacks even crossed into German territory west of Kalisch (12 November) and cut the Cracow-Posen Railway. In his eagerness to assist Dmitriev, he had shifted his army somewhat to the south so that his left wing was able to capture a town on the Galician frontier only 20 miles from Cracow. On 13 Nov. 1914, at the moment when Hindenburg was starting his second great attack on Warsaw, Russky's front, as may be seen by the accompanying small map, extended in a curve from the neighborhood of Cracow on the upper Vistula toward Plock on the lower Vistula. But most of his troops were concentrated along the Warta, because it was here that the Germans appeared to make a stand after their retirement. The northern end of his line between the Warta and the Vistula was made very thin; for no enemy seemed to be near. Here, in fact, there was practically a gap between the Russian centre and the Russian right wing on the Narev-Niemen line. It was through this gap, only 40 miles wide, that Hindenburg began to pour an irresistible force. He had collected this force by transporting German troops by rail northward from the Silesian frontier around to Thorn on the Vistula. To these he added more of the East Prussian army under General von François. He had also several corps from Germany. Ludendorff was assisting Hindenburg at the staff headquarters, and Mackensen was in immediate command.

Russky's position soon became desperate. His thin right wing was exposed to attack on the flank and rear. In fact his whole line stood practically with the enemy at its rear, and was in danger of being cut off from Warsaw. For Russky was further from Warsaw than Mackensen's advancing troops. Moreover, he had to make all his movements over country in which the roads and railways had been systematically destroyed, while Mackensen had a relatively well-ordered territory to march through. Russky is to blame for allowing himself to be thus caught too far from his base in a bad country, with too long and thin a front. But he retrieved himself admirably. He succeeded in drawing his right wing from its exposed position, although in so doing he lost many thousand prisoners. He then ordered a general retreat toward Lodz, in order to get behind the Bzura River. This river rises west of Lodz and flows northeastward past Lowicz until it joins the Vistula half-way between Warsaw and Plock. Owing to a bend in the Vistula, the Bzura gave the Russians the shortest line between the Lodz region and the Vistula for defending Warsaw. If the Russians could hold the banks of the Bzura they could retain possession of the railways from Lodz and Piotrkov. The Rawka River, flowing into the Bzura from the south, should also be noted; it affords some protection to an army retreating eastward toward Warsaw.

By 20 November a week after he first became aware of Mackensen's advance, Russky had succeeded in retiring most of his right wing behind the Bzura, near Lodz. Siberian levies which had just arrived in Warsaw were hurried up to the front, and reinforcements were hastily summoned from Rennenkampf's army opposite East Prussia. With these Siberian troops Russky was able to maintain a very stubborn resistance on the Bzura. But on 23 November two of Mackensen's corps broke through the Russian line between Lodz and Lowicz. For a few hours the Russians in Lodz were in a most perilous situation, having to fight an enemy on their front, flank and rear. Here, at what is called the Battle of Lodz, though the fighting was some distance from the town, took place the fiercest and most desperate hand-to-hand fighting which had yet occurred on the Eastern Front, and, as usual when it came to bayonet work, the Russians got the upper hand. With reinforcements which kept coming up they checked and very nearly surrounded the two German corps which had broken through the Russian line. The Germans in their turn — or at least these two corps — were in a dangerous position. They were now entrapped as in a narrow-necked bottle, caught between three fires, and able to keep open only the very narrowest line of communication with the rest of the German army. Russky tried valiantly to cut off this narrow neck of the bottle, and so to "pocket" completely the two German corps which had broken through the Russian line. For three days (24–26 November), night and day, but especially at night, the fierce struggle went on between the 60,000 Germans trying to break out of the ever narrowing circle of Russian troops, and the Russians trying to cut them off or surround them. The Russians almost succeeded. It is said that one of the kaiser's sons, fearing capture along with these army corps, escaped in an aeroplane over the Russian line. The Russians on their side were so confident of success that orders were given to have rolling stock collected at Warsaw to take away the prisoners. But owing to the new troops which Mackensen hurled forward to widen the opening of the "pocket," and owing to tactical errors on the Russian side for which Rennenkampf was blamed, the living circle was not closed and the Germans escaped from the perilous pocket into which they had been led by their first success. Rennenkampf was dismissed after this; his troops had been counted upon to close the exit but they were late; the popular notion, however, that he was pro-German and a traitor — easily believed on account of his German name and his disgraceful flight from East Prussia — probably had no basis.

After this severe fighting at Lodz, Russky shortened his front still further, giving up the city and withdrawing eastward to a position behind the Bzura and the Rawka, where he dug himself in and stood fast. For the first time on the Eastern Front the fighting ceased to be a series of strategical movements over great areas. It settled down for nearly four months into the war of fixed positions — trench warfare — which had already become familiar on the Western Front soon after the battle of the Marne. The Russians, however, had as yet no barbed wire to protect their trenches, and they were beginning to run short of ammunition, especially artillery supplies. But they managed to protect themselves in the trenches by all sorts of hand-grenades made from materials found on the spot, such as empty tin cans, shell cases and gas pipes. Several times the Germans made prolonged efforts, supported by hurricanes of artillery fire, to drive the Russians from this Bzura-Rawka line back toward Warsaw. At Christmas they used asphyxiating gas bombs for the first time. By this means they got into some of the Russian trenches, but with poetic justice were overcome by their own gas. Those who were thus unconscious but not actually killed were buried in the trenches where they lay, by order of the Russian officer who supposed they were dead. The rest were driven out in a counterattack. A few hours later some Russian soldiers who had been partially asphyxiated in a wood and had recovered came back to hospital quarters for relief and treatment. It was not until then that the Russian officers became aware of the barbarous new weapon that the Germans were using. Again during the first week in February 1915 heavy assaults, preceded by gas and long artillery preparation, were made against the Russians behind the Bzura-Rawka lines. But the Germans gained only a few thousand yards.

6. The Winter Battle of the Masurian Lakes, February 1915.— In the first week of February 1915 Hindenburg was finally convinced that the attacks on the Bzura-Rawka trenches were merely resulting in a wasteful and futile expenditure of German man-power. He concluded that it was impossible to take Warsaw by a frontal attack from the West and turned again to East Prussia, to a point farther east of Tannenberg and the scene of his first great victory. Again using his favorite method of a very rapid surprise attack, depending on a quick concentration by strategic railways, he launched against the Niemen-Narev line the strongest single army which Germany had yet put into the Eastern war area. It was Hindenburg's culminating effort. If it succeeded, the communications between Warsaw and Petrograd would be cut; the Niemen-Narev line of fortresses would become useless to Russia; Warsaw could be easily taken from the rear, and Przemysl would be relieved from the various besieging armies which by starvation were bringing it day by day nearer to surrender. Austria was instructed by Hindenburg to aid his plan by attacking vigorously at the Carpathian passes. This Austrian offensive would prevent the transfer of any troops from the Galician front to strengthen the Russian line threatened in the north, and Russia would be speedily forced back behind the Bug to Brest-Litovsk and the Pripet Marshes.

The Winter Battle of the Masurian Lakes began on 7 Feb. 1915 just as the final assault on the Bzura was dying away. The moment was favorable for Hindenburg because the Russians, under General Sievers, had been making a slight advance in East Prussia with the idea of drawing off German troops from the Warsaw front. The Russians had no suspicion of this tremendous winter attack. Sievers had about 120,000 men, but had allowed them to become dispersed among the Masurian Lakes, when he suddenly realized that he was being counter-attacked and completely outflanked by

a German force twice as large as his own. One German army moved along the railway from Koenigsberg toward Kovno and was beginning to encircle the Russian right flank; the other moved on the railways from Koenigsberg toward Bialystok and threatened to surround the Russian left. Sievers had to struggle back 70 miles over half frozen lakes and through blind forests choked with snow drifts in his effort to regain his line of defense behind the Niemen and the Narev. In this retreat he lost at least 30,000 men and 80 guns. Berlin celebrated the victory as a second Tannenberg. But Siever's army was not annihilated as Samsonov's had been, and by 20 February he was able to entrench himself. With reinforcements he even counter-attacked when the German thrust had spent its force. By the first week in March he won his way back to a corner of Prussian soil at Lyck, where the East Prussian frontier bulges into Russian territory. He doubtless would have won back a larger foothold in East Prussia had not the Russian shortage in rifles and ammunition begun to make itself cruelly felt. So serious was the shortage in hand rifles that in the "Winter Battle" of the Masurian Lakes Russia actually had trained but unarmed men come up behind the fighting line ready to fill up the gaps and take up the weapons of the dead. Men were even flung into the firing line armed only with a bayonet in one hand and a couple of bombs in the other, or even only with wooden clubs. With the courage and ferocity of combats in a primitive age they rushed close enough to throw their bombs and they charged with cold steel or the clubs. When it came to the fierce hand-to-hand fighting the Germans always gave way. By 10 March 1915 the fighting on this part of the front died down. Warsaw was not to be taken from the Russians by way of East Prussia. There remained one other way which Hindenburg had not yet tried — the way through Galicia with an advance on the rear of Warsaw from the southeast. This brings us to the struggle for Przemysl and the German attack on the Dunajec.

7. The Russian Capture of Przemysl, 22 March 1915.— Ivanov's campaign in Galicia for the capture of Cracow had necessarily been somewhat checked by Hindenburg's assaults on Russky's lines in front of Warsaw. Ivanov had transferred some of his troups on the left of the Russian front to Russky in the centre, and he had drawn back his columns which had been advancing on Cracow; for if Warsaw fell, and it might happen, Russian troops too far west in Galicia would be in danger of being cut off. Brussilov also had had to give up some of the Carpathian passes which he had occupied in the fall of 1914, in spite of the fact that the possession of these passes was essential to any future advance in Cracow. During the winter of 1914–15 Brussilov had kept up a continuous struggle, with alternating success and failure, for the possession of these Carpathian passes. As soon, however, as Warsaw seemed to be safe from Hindenburg's assaults, he began to press forward more vigorously and all the passes of the Carpathians were reoccupied.

Of more military importance was the capture of Przemysl. This first-class fortress, dominating western Galicia and controlling two of the railways from Galicia into Hungary, had been completely surrounded and cut off by Ivanov and Radko-Dmitriev on 27 Sept. 1914, during the first Russian occupation of Galicia. Starvation soon began to threaten it, for the Austrians had not collected any great amount of provisions there, never supposing that Russian armies would reach it. When it became clear that a siege was likely to take place, the Austrian commander sent off some of the civilian population. But those who departed were more than equaled by the large number of soldiers, perhaps 100,000, from Auffenberg's army, who took refuge in the fortress after their defeat at Lemberg. In the middle of October 1914 Hindenburg by his first assault on Warsaw had brought a momentary relief to Przemysl. Frightened at Hindenburg's advance toward the middle Vistula, the Russians in Galicia had withdrawn their advance column and raised the siege on the west of the city. For several days large quantities of food and ammunition were hurried into Przemysl and the fortress had leisure to prepare for a second, longer and grimmer siege. After the failure of Hindenburg's first assault on Warsaw the Russian ring again closed round Przemysl. In the defense of this fortress the Austrians showed as much incompetence as in their initial campaigns before Lemberg and Rawa Russka. They kept within the fortifications far too great a proportion of the civilian population, whose mouths had to share the insufficient stock of provisions. The excessively large Austrian military force — nearly 150,000 men — was packed inside the outer intrenchments and did little to strengthen the defenses or to worry the enemy by aggressive tactics. The Austrians depended wholly on the protection of their heavy guns planted in concrete emplacements. Instead of shifting them in that system of "mobile defense" which the French used so cleverly at Verdun, they allowed the Russians' heavy shells to blow up some of their guns and destroy their outer works. However, the Russians did not care to pay the cost of human life and possible failure which a general assault on the strongly fortified works might entail. They waited for starvation to do its work. By 1 March 1915 food and fuel had become very scarce, and the morale of the besieged army was growing perceptibly worse. Many of the civil population, who were not allowed the same rations as the soldiers, had already died of cold and hunger. On 13th March the Russians carried by assault a segment of the outer line of fortifications to the north of the fortress. They fortified the ground they had captured and from it were able to begin a bombardment of the inner circle of forts. This sealed the fate of Przemysl. Four days later the garrison made a feeble attempt at a sortie in the direction of Lemberg, but they were driven back suffering heavy loss of killed in addition to 4,000 prisoners left in the hands of the Russians. With the failure of this sortie General von Kusmanek and his staff lost all courage and hope. Early on the morning of Monday, 22 March 1915, the Russians were startled by the noise of great explosions and then by the sight of heavy columns of smoke, rising above the city. The Austrians were blowing up their ammunition and guns and destroy-

ing other war material. Then a white flag appeared and Austrian officers brought a formal letter of surrender.

The capture of Przemysl, as has been well said, was not a Russian achievement so much as an Austrian disgrace. The fortress fell like an overripe fruit. The action is not to be compared with any of the great sieges of history, for it was not a case of a strife of inflexible wills or an issue determined by overmastering skill and strength; nor did it prove of any permanent or decisive value to Russia. To be sure, it deprived Austria of the 120,000 soldiers who surrendered as prisoners of war and were shipped to Russian prison camps or to Siberia. Russia also acquired a considerable stock of ammunition and guns, both large and small, which the defenders had not had time to destroy. And it improved Russia's railway control in Galicia. But as we shall now see it did not give her a rock of strength such as Verdun gave the French, which could be defended against the strategy of Hindenburg and Mackensen. Within three months of their capture of Przemysl the Russians themselves in turn were forced to evacuate it as fast as they knew how, because Mackensen had won the decisive battle of the Dunajec and was driving eastward through Galicia with irresistible force.

8. The Battle of the Dunajec and the Great Russian Retreat of 1915.— By 25 April 1915 the Russians thought they had consolidated their occupation of Galicia by the capture of Przemysl and by an extension of their control of the Carpathian passes. By this same date Hindenburg had practically completed the preparation for Mackensen's big attack on the Dunajec which was to force the great Russian retreat of 1915. It is well to note the position of the Eastern Front at this moment, as indicated on the map. Practically all of Galicia, except Cracow and the territory west of the town of Tarnow and the Dunajec River, was within the Russian lines; in Poland Russia had been forced by strategic reasons and by Hindenburg's persistent attacks to give up the Polish salient as far as a line which curved west of Kielce and the Rawka River; on the northern flank the battle front practically followed the East Prussian frontier except that the Germans controlled the Vistula below Plock, and the Russians had a foothold in East Prussia at Lyck. Perhaps the Russians might have held this line except for three great handicaps by which they suffered severely: (1) The lack of good communications for the rapid transfer of troops from one part of the front to another; of this nothing further need be said as it has been discussed above. (2) Treachery at home. The more we know about the war on the Eastern Front the more it becomes clear that both at the front and in high circles around the tsar treachery was continually at work among pro-German sympathizers. At the front German commanders always seemed to be well informed ahead of time of any movements the Russians were about to make. But it was impossible to get rid of all the traitors, particularly as both the military and civil service in Russia were filled in large numbers by the so-called Baltic Germans. These «Baltic Barons,» who owned large landed estates in Courland and Esthonia, were subjects of the tsar by the chance that the regions had been annexed by the Romanovs a century or more before; but in their culture, sympathy and family ties many of the Baltic barons were far more closely in sympathy with the Prussian Junkers than with the tsar's government. One of the results for which they confidently hoped from the war was that Germany would seize and again control the Baltic provinces which had originally been conquered from the native Letts and Esthonians by the Teutonic knights seven centuries before. It was not merely among the military officers that traitors were to be found. Much more dangerous were the pro-German sympathizers at court around the tsarina, a German princess. These were the men who by their intrigues secured the dismissal, or counteracted the influence, of true Russian liberals and patriots who wanted to speed up the manufacture of munitions and conduct a vigorous war for the early victory of the Allies. The situation was summed up in the pathetic cry attributed to the little tsarevitch: «When the Germans win papa cries, and when the Russians win mama cries.»

(3) The shortage of ammunition and guns, however, was the most serious cause of Russia's forced retreat in 1915. The experience of the first weeks of the war had shattered all calculations as to ammunition, based upon the lessons of the Russo-Japanese War. The stock of munitions on hand, which was considerable, was generously dealt out at the beginning and aided materially in the Russian occupation of Galicia and East Prussia; but by October 1914, a shortage, especially of artillery ammunition, began to make itself felt. For months batteries in action did not receive more than four shells per day per gun — and this at a time when the Germans made profuse use of an apparently inexhaustible supply. As Russian soldiers were killed or taken prisoners, Russia lost such a large part of her stock of small arms that the new formations of men who were called into being in the winter of 1914–15 could not be completely supplied with rifles and equipment. Unfortunately no plans had been made for increased production of arms and ammunition during the war, so that when the shortage became dangerous nothing was ready to remedy it. Generous offers of munition were made from abroad especially from America and from Japan. But the Americans wanted time to prepare machinery to begin production on a vast scale, and the Russian Ministry of War could not make up its mind to place great orders because it feared that the American firms could not, or would not, make deliveries soon enough to meet the crisis. Japan furnished some small calibre rifles, but they could not use the same cartridge as the standard Russian «five-clip» magazine rifles. For lack of equipment Russia actually had to disband several hundred thousand men who had been called up for military service. And in some battles trained but unarmed men stood behind the front ranks ready to step forward and take the guns of those who were killed. This shortage, of course, inevitably had a very bad effect upon the morale of the soldiers. It not only explains in part the great Russian Retreat of 1915, but it began to sow in the minds of the men a distrust of the efficiency and integrity of the tsar's government. The distrust was greatly increased after the Great Retreat and was one of the main direct

causes of the overthrow of absolutism by the Revolution of March 1917. And the distrust was justified, as is proved by the patriotic but futile efforts of Rodzianko, president of the Duma, who tried in vain to get munitions provided. He visited the fronts. He saw soldiers armed with nothing but sticks. He was told by the Grand Duke Nicholas: "An army cannot go on fighting without rifles or boots." He tried to get production of munitions speeded up by calling a Zemstvo congress and then by a special conference. But for many precious months he was thwarted by the chaos and intrigue in the Ministry of War and by the personal rivalry between Sukhomlinov and the Grand Duke Sergius. Some of the chaos and intrigue was later exposed in the famous Sukhomlinov trial. In justice to the liberals and the patriots in Russia, however, it should be added that by August 1915 a war trade committee was organized under the able leadership of A. T. Guchkov, who later became the first Minister of War after the Revolution. This committee energetically began to organize a great number of private firms, both large and small, for the manufacture of guns and munitions, so that the shortages were gradually made up. By the spring of 1917 the generals at the front were at last made happy by being able to reckon upon a fairly adequate number of shells for the artillery and on about 100,000 4.8-inch trench mortar bombs. But the supply came too late to be of any avail in the spring of 1915; and, by the irony of fate, when the munitions were plentiful in 1917 the soldiers did not care to use them, for they had been demoralized as a result of the Revolution.

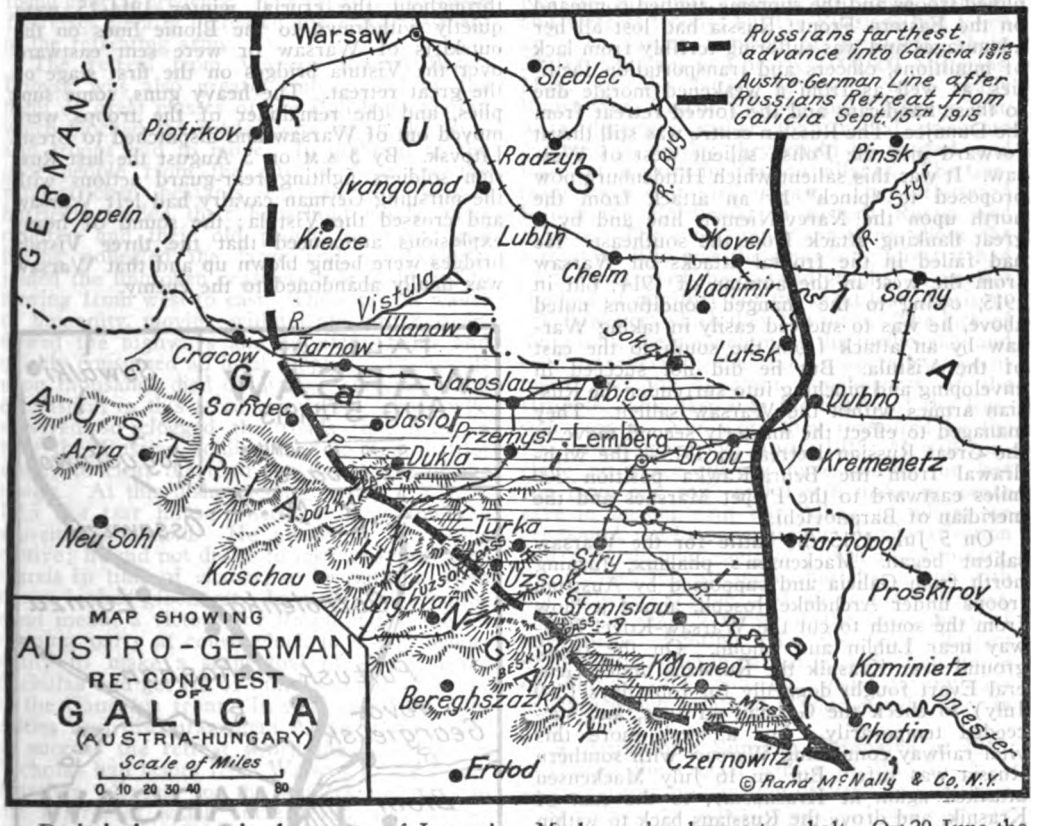
Thus handicapped by lack of transportation facilities, by treachery at home and by lack of munitions and officers, the long Russian front of 900 miles could not withstand the great offensive which the Germans had planned in Lithuania and on the Dunajec for the spring of 1915. In April and May 1915, German armies pushed rapidly over the Niemen along the Baltic Coast and took the important Lettish sea-ports of Libau and Windau. Advancing further through Courland, where they found much support from pro-German "Baltic Barons," they advanced to the Duna River and threatened the great industrial city and seaport of Riga, with its 600,000 inhabitants. Here, however, the Letts, who had bitterly hated for centuries the domination of the German landlords and capitalists, hastily organized volunteer rifle-battalions and heroically maintained the defense of their chief city. Their quick action and the natural defense formed by the broad waters of the Duna River and by the swamps near its mouth prevented the Germans for more than two years from capturing Riga. The city did not fall into German hands until September 1917, when the military chaos caused by the Revolution had destroyed all Russia's power of resistance. By advancing to the Duna the Germans had gained control of the greater part of Lithuania and Courland. This region was now organized by the Germans as "Ober-Ost," i.e., as the military occupation district of the supreme command in the East. It was provided with German officials, German postal service, German money, German colonists, and in fact treated in every way as if it were to become a permanent part, in accordance with Pan-German dreams, of the German empire in the East. While the Russian general staff was occupied in the north with this forced retirement to the Duna, at the other end of their long line, in Galicia, they were about to be struck an irresistible blow by Mackensen's "phalanx." Though the Russians did not know it, Hindenburg had been quietly massing troops by railways during March and April 1915, for a great blow on the Russian line in Galicia. In true Napoleonic fashion he had concentrated upon a single point — the Russian line behind the Dunajec River — a force which has been estimated at nearly 1,000,000 men. It was composed partly of Austrian troops; but its great strength came from the large number of German units which included some of the finest of the German forces drawn from the Western Front, like the Prussian Guard Reserve corps and the 10th corps which had once been with von Kluck. It included also some "assault divisions" which were created by skimming the cream from the first-line troops. These picked German troops, under the very able command of Mackensen, formed a powerful thrusting force, or "phalanx" — just the weapon needed for breaking through an enemy line. Not less important was the fact that the phalanx was supported by a mass of heavy artillery with an unlimited amount of ammunition. Hindenburg intended to break through the Russian line completely. He hoped thereby to accomplish several strategic purposes; he would demoralize the Russian troops in front of him, capturing or routing them, thus enabling him to recover Przemysl and Lemberg, and clear Galicia of the enemy; he could then strike at Warsaw from the south and east, on the right bank of the Vistula, and easily force the Russians to evacuate it; and he would cut off and capture Brussilov's armies in the Carpathian passes before they could secure their line of retreat. He succeeded, as we shall see, in clearing Galicia and taking Warsaw but not, thanks to Brussilov's brilliant manœuvres, in cutting off the Russians in the Carpathians.

The Russian front behind the Dunajec, south of the town of Tarnow, was commanded by Radko-Dmitriev. He was utterly unaware of what was being prepared against him, almost up to the very moment when the blow came. Only in the last days of April did he begin to realize that a great force was concentrating against him. He applied instantly to Ivanov for two additional corps. By some blunder of a staff officer, the request never reached Ivanov. Dmitriev was thus left to meet the enemy with no more than his winter strength of men and with a pitiful shortage of ammunition for his guns.

On Saturday, 1 May 1915, the great German batteries were suddenly loosed; 700,000 shells were hurled into the shallow Russian trenches, completely demolishing the works and somewhat demoralizing the men. For the bravest of men cannot continue to fight in trenches which have ceased to exist. The awful storm of German artillery was followed by the attack of the "phalanx" which crossed the Dunajec, and its tributary the Biala, on pontoons in greatly superior numbers on a 20-mile front south of Tarnow. After 48 hours, on Sunday

night, the Russian defense collapsed under the terrific German pressure. Dmitriev was not routed, but he lost very heavily in men and guns as he fell back to the protection of the Wisloka River 20 miles to the east. But he had prepared no entrenchments on the eastern bank of the Wisloka so that the reinforcements which were hurried up were of little avail. For five days — until Friday, 7 May — his troops bravely clung to their hastily-made shallow trenches on the eastern bank of the Wisloka. But again the German artillery and Mackensen's charging phalanx made the Russian case hopeless. Again Dmitriev had to fall back rapidly between the railways leading to Jaroslav and Przemysl.

any attempted. Przemysl was evacuated by the Russians, on 2 June, after it had been held by them only a little more than two months. Gourko's Sixth Army was hurriedly called from the Northern Front, to save the fortress, but before it could even reach the Galician frontier Przemysl had already fallen. Therefore, the 6th Army, without being detrained, was railed through to Lemberg. In a three-days' battle (8–11 June) south of that city, near Stryj, Gourko supported Brussilov in such a vigorous attack that the Russians captured 15,000 prisoners and compelled the Germans to retire temporarily to the right bank of the Dniester. But Ivanov and his staff by this time seemed to have lost heart and faith in the possibility of bringing



Dmitriev's retreat in the centre of Ivanov's army in Galicia seriously endangered the right wing near the Polish salient under Evart and the left wing scattered among the Carpathians under Brussilov. But Ivanov and the Grand Duke Nicholas were quick to see the disaster which would follow if a wide gap were allowed to open between the centre and these two wings. The Russian general staff, therefore, at once made up its mind to a retreat which should be as rapid but as orderly as possible. Skilful counterattacks by Evart and by Brussilov against the less formidable Austrian troops on Mackensen's flanks helped to check the onslaught of the German phalanx in the centre, and to preserve the contact between the different parts of the Russian front. But no permanent stand could be made, nor in fact was Mackensen's advance to a halt. On 20 June the strong position at the Grodek Lakes and Rawa Russka had to be abandoned after heavy fighting. This necessitated, two days later (22 June), the Russian evacuation of Lemberg. After nine months the capital of Galicia, with its invaluable railway connections, was once more in Austrian hands. The Russians fought rear-guard actions along the rivers east of Lemberg, and finally came to a halt 20 miles east of Tarnopol near the boundary between Galicia and Russia.

Such was the first move in the Great Russian Retreat of 1915. By the battle of the Dunajec, Hindenburg had recovered Galicia for Austria, just as he had recovered East Prussia for Germany by the battle of Tannenberg. These were the two great decisive battles of the war

on the Eastern Front. By 1 July 1915 the line of the Eastern Front had been approximately restored to its position at the beginning of the war on 1 Aug. 1914, except that at the northern end the Germans were now across the lower Niemen and in possession of the Russian territories of Lithuania and Courland. But though the front lines were in somewhat the same position there was a vast difference in the general situation. In August 1914 Germany had only very weak forces on the Eastern Front and had not established a close co-ordination with Austria. Russia had the advantage of the initiative, with a rapidly mobilized army and a good stock of munitions and equipment. In July 1915 Hindenburg had vast, victorious, well-disciplined troops and the supreme, unified command on the Eastern Front; Russia had lost all her advantages and was suffering terribly from lack of munitions, officers and transportation facilities, as well as from a weakened morale due to these handicaps and the forced retreat from the Dunajec. The Russian centre was still thrust forward into the Polish salient west of Warsaw. It was this salient which Hindenburg now proposed to "pinch" by an attack from the north upon the Narev-Niemen line and by a great flanking attack from the southeast. He had failed in the frontal attacks on Warsaw from the west in the autumn of 1914; but in 1915, owing to the changed conditions noted above, he was to succeed easily in taking Warsaw by an attack from the south to the east of the Vistula. But he did not succeed in enveloping and pinching into surrender the Russian armies within the Warsaw salient. They managed to effect the masterly second move in the Great Russian Retreat of 1915 — the withdrawal from the Bzura-Rawka position 300 miles eastward to the Pripet Marshes and the meridian of Baranovichi.

On 5 July 1915 the battle for the Warsaw salient began. Mackensen's phalanx, turning north from Galicia and supported by Austrian troops under Archduke Joseph, aimed a blow from the south to cut the Warsaw-Kovel Railway near Lublin and Cholm. On the rising ground near Krasnik the Russians under General Evart fought doggedly for four days (5–9 July) to check the German advance, and succeeded temporarily. For a week more this vital railway connecting Warsaw with southern Russia was safe. But on 16 July Mackensen attacked again at Krasnostav, to the east of Krasnik, and drove the Russians back to within 10 miles of the railway near Cholm. It was evidently only a matter of a few days before the railway would be reached and cut.

Meanwhile, on 14 July, on the northern side of the salient, General von Gallwitz had succeeded in breaking through the Narev line of defense with a great German force. Having crossed the Narev between Ostrolenka and Novo-Georgievsk, he was threatening to cut the northern railway which ran from Warsaw to Petrograd and formed the connecting link behind the great fortresses of Ossowietz, Grodno and Kovno. If Mackensen and Gallwitz cut these two railways on the two sides of the Warsaw salient, the Russian forces would have been left with only the central railway which runs due east from Warsaw to Brest-Litovsk. This single railway would be wholly inadequate to supply the large Russian army in the Polish salient if it should try to hold on to its positions, and equally inadequate to bear the strain of a retreat if it should ultimately be forced to retire.

In this critical situation, on 18 July, the Grand Duke Nicholas wisely decided to abandon Warsaw in order to save his army. It was a bitter decision, but it was in accordance with prudence, honor and sound strategy. The civil population of Warsaw was partially evacuated and began its melancholy exodus toward the unknown east, crowded in cattle trains, jammed into wagons, or forced to plod helplessly on foot. The troops which had clung to the trenches behind the Bzura and Rawka rivers throughout the crucial winter 1914–15 were quietly withdrawn to the Blonie lines on the outskirts of Warsaw or were sent eastward over the Vistula bridges on the first stage of the great retreat. The heavy guns, some supplies, and the remainder of the troops were moved out of Warsaw and dispatched to Brest-Litovsk. By 3 A.M on 5 August the last Russian soldiers fighting rear-guard actions with the pursuing German cavalry had left Warsaw and crossed the Vistula; the sound of heavy explosions announced that the three Vistula bridges were being blown up and that Warsaw was finally abandoned to the enemy.

The abandonment of Warsaw and the advance of the German armies led in quick succession to the fall of the great fortresses which had hitherto protected the two sides of the Warsaw salient. Ivangorod had fallen on

4 August; Kovno was battered into ruins and surrendered on 7 August, with a loss of 20,000 prisoners and all the guns; Novo-Georgievsk did the same on 19 August; Brest-Litovsk, the great Lithuanian border fortress, fell a week later on 25 August. These capitulations were heavy blows, for these fortresses had been counted upon to hold out for a much longer time as a check to the advancing forces of the enemy. But they were manned only with new and insufficiently trained men, their ammunition was rapidly exhausted, and the fortification works could not stand against the concentrated fire of the German heavy artillery. Consequently the morale was low and there may have been truth in the stories of treachery which found general credence. The rapid fall of these fortresses greatly increased the embarrassment of the retreating army.

The retreat from Warsaw toward Brest-Litovsk was also greatly embarrassed by the flight of great masses of the Polish population which blocked the roads along which the Russian troops had to move. In addition to the poor people from the city of Warsaw, the panic-stricken peasants east of the Vistula hurriedly loaded their household goods, their children and their old people, on carts, and having collected the large and small cattle, joined the unbroken ceaseless tide of humanity moving from west to east. These pitiful waves of humanity, moving without any order, overflowed the highways and adjoining fields and quickly consumed all local supplies. Thousands upon thousands died of disease, starvation and exhaustion in this terrible exodus. Those who survived so clogged the roads that many a time the Russian soldiers had to fight battles simply to clear the road for the retreat of the troops. At this disheartening crisis on 5 Sept. 1915 the tsar himself decided to assume the supreme command. He alleged a chivalrous motive; he did not desire to take away anyone's laurels in time of victory, so he came in when things looked gloomiest. In reality his appointment meant a victory for Rasputin and the intriguing party at court which took this opportunity to make a scape-goat of Grand Duke Nicholas and get rid of him by sending him off to the Caucasus front. In spite of all the difficulties and discouragement Alexeiev conducted to success the retreat which the Grand Duke Nicholas had begun from Warsaw to the Pripet Marshes. Except for the soldiers and guns in the fortresses which surrendered, the greater part of the Russian army was preserved intact. And this was worth more than the soil which had been abandoned. By the end of September there came a lull on the Eastern Front, except at the northern end where the Germans made several fruitless attempts to capture Riga. The German armies found that it was increasingly difficult for them to move in the region east of Brest-Litovsk. The German army was weary after the hard campaigns in Galicia and Poland. It had lost some of the effectiveness of its striking power; moreover, winter was coming on, and Hindenburg sagely decided that it would be wiser not to run the risk of attempting to succeed where Napoleon had failed. Instead of seeking a final settlement of the war on the Eastern Front by pushing on to Moscow or Petrograd in a winter campaign, he allowed the German army to settle down into the fixed positions of trench warfare for the winter of 1915–16. The Eastern Front, therefore, from 1 Nov. 1915 to 4 June 1916 ran, as may be seen by the line on the map, in a general north and south line along the meridian of Baranovichi. The Russians still held firmly to Riga and the Duna River, which was a strong natural line of defense. But they had been compelled to evacuate Pinsk and Baranovichi itself and the Great Headquarters had been moved back to Mohilev. Farther south, the Front followed the Goryn River, a branch of the Pripet, in such a way that the Russians retained possession of Rovno and Tarnopol.

It has been estimated that up to the close of 1915 the Germans had captured nearly 2,000,000 Russian prisoners, mostly untrained reserves and fortress troops; but the Russians had taken an even larger number of prisoners, about 200,000 Germans and nearly 2,000,000 Austrians. Many of the latter, however, were really Rumanians, Czecho-Slovaks and Galicians who were deserters rather than actual prisoners captured in battle; they could be trusted, and were set to work in Russian villages. The Germans were sent farther east. They afterward helped the Bolsheviki in eastern Russia and Siberia. The most important thing about the retreat of 1915 was the depressing effect it had on the masses of the Russian people. It was not the loss of territory nor the great loss in prisoners, however, which they felt most. The lack of munitions, the conviction of the inefficiency and even treachery of the tsar's autocratic government, and the apparent hopelessness of the struggle, sank deep into the hearts of the Russian people. Nor were they reassured by the tsar's message at Christmas, 1915: «I will conclude no peace till we have chased the last foe from our soil; and I will make no peace save in unison with our Allies, to whom we are bound, not by paper treaties, but by affection and our common sacrifice.» On the contrary, the masses felt an increasing discontent with the existing régime and its court intrigues, and an increasing sense of the uselessness of any further fighting. To the Great Retreat must be attributed in part at least the Revolution of March 1917, and the socialistic military collapse which followed it four months later in July 1917.

9. Brussilov's Summer Offensive in 1916. — During the crucial winter of 1915–16 there was a careful mobilization of Russian industries with a view to subordinating all manufacture to the one great aim of increasing war material and improving the transportation on the railways. The result was that the deficiencies which had so largely caused the Great Retreat in 1915 were largely made up and the outlook seemed much brighter from this point of view.

General Alexeiev, who had become chief-of-staff in September 1915, when Nicholas II became commander-in-chief, planned to wait until the summer of 1916 before undertaking an offensive. This would give a longer period for accumulating munitions. It was also hoped that the Allies in the west could by that time launch a great offensive, and that the Central Powers, struck on both fronts at once, and unable to transfer troops in either direction, could at last be forced down to defeat. But two unforeseen events caused Alexeiev to undertake offensives earlier than he had intended. These two events

were the German attack on Verdun and the Austrian attack on Italy.

To lessen the German pressure on Verdun, Alexeiev consented to an offensive by Kuropatkin on the Northern Front against the Germans in Courland. The attack was to be made from the line of the Duna River between Riga and Dvinsk; but the Germans got warning in time to call up plenty of reserves. And the failure to secure any permanent marked success clearly showed that an advance made under the conditions of trench warfare in that region, during periods of frosts or winter thaws, placed the attacking armies in a much more difficult position than the defending forces. Even if the attacking troops were able to carry the enemy trenches and make any considerable advance, the frozen ground prevented them from digging themselves in; the attacking forces were then at once exposed to the merciless fire of the enemy's artillery. A similar Russian offensive in April, farther south, opposite Vilna, had no better success. Both these activities, however, may have served their purpose in relieving a little the intensity of the German pressure on Verdun.

Much more important for Russia was the Austrian advance into Italy in May 1916. To draw off some of the Austrian forces by a renewed Russian attack on Galicia, Alexeiev consented to allow Brussilov to begin his great summer offensive a month earlier than had been originally planned. General Brussilov, in recognition of the great skill with which he had withdrawn the extreme Russian left in 1915, had superseded Ivanov in command of the Southern Army Front. This extended nearly 300 miles from the Pripet River and Marshes south to the Rumanian frontier. Brussilov had under him four armies with able commanders: Kaledine with his headquarters at Rovno; Sakharov threatening Brody; Scherbachev astride the Galician frontier near Tarnopol; and Lechitsky ready to cross the Dniester and occupy Bukovina. Opposed to Brussilov were five German-Austrian armies under the nominal supreme command of Archduke Frederick. They numbered altogether about 750,000 men, which was less than half the forces which had been placed under Brussilov. Instead of trying to break through any one point in the enemy's line, it was Brussilov's plan to try out the whole front with what may be regarded as an immense reconnaissance. His objective point was not yet determined. He would wait until he had tested out the strength of the enemy's line before he decided on a special strategic aim.

Accordingly on Saturday, 3 June 1916, Brussilov opened a steady bombardment along his whole front with as great an intensity as his guns permitted. As the front was nearly 300 miles long the cannonade could, of course, not compare in intensity with the terrific bombardments which preceded the attacks at Neuve Chapelle, the Dunajec or Verdun. It did not disrupt the trenches, but it ploughed many broad alleys through the German barbed wire entanglements. After 20 hours of such artillery preparation, on Sunday morning, 4 June, the waves of Russian infantry sprang over the parapets to attack along the whole front. In the north, opposite Kaledine, the Austrian front was completely broken by noon of the first day. The Russian bayonets carried the Austrian trenches, while the Russian barrage cut off all communications with the rear. The result was that the fine Austrian trenches and dugouts proved death-traps. Austrian soldiers huddled together in them could not escape and were captured in thousands by the triumphant Russian infantry. That day in Lutsk the birthday of the Archduke Frederick was being celebrated, when news came that the Austrian front was swept away and that the enemy were approaching the gates. Confidence was placed for a moment in the great strength of the Lutsk defenses; but Austrian demoralization was so complete that at 8:25 P.M. on Tuesday, 6 June, the vanguard of Kaledine's columns entered the city and took possession of a great booty of guns, shells and provisions. Many thousand Austrian wounded who had no time to escape were also taken prisoners. By the capture of Lutsk, Kaledine was able to reach and cross the Styr during the next few days and to reach a point within 25 miles of Kovel.

On the extreme south, while Kaledine was sweeping upon Lutsk, Lechitsky had achieved an equal success by crossing the Dniester, routing the Austrians under Pflantzer-Baltin, and advancing into Bukovina. On 16 June he captured Czernovitz, the capital of the province, and on 23 June he took Kimpolung, the most southerly town in Bukovina. The Austrian resistance had completely broken down and all of Bukovina was in Russian hands. In the centre, between Kaledine and Lechitsky, Sakharov and Scherbachev also advanced with success and took many thousand prisoners, but they occupied much less territory. June 23 may be said to mark the end of the first stage of Brussilov's offensive. Within three weeks his armies had captured 4,000 officers, 194,000 men, 219 heavy guns, 644 machine guns and vast quantities of war material. It was one of the most rapid and spectacular advances in the history of the war; but it left the Russian line with two great salients — at Lutsk and in Bukovina — which were dangerously open to German counterattacks on their sides.

It was necessary for Brussilov to straighten out his line by advancing the northern end near the Pripet Marshes and the centre between Tarnopol and Brody. This was done successfully during July. A new army under General Loesch managed to push forward on Kaledine's right flank, thus advancing the Russian front north of Lutsk. In the centre, Brussilov learned in some way — probably by means of his excellent spy service among the local population — that the Germans were preparing a great counterattack for 18 July, and he decided to strike strongly and speedily before the counterattack had time to mature. On the night of 15 July Sakharov struck heavily at the German line north of Brody, and captured 13,000 prisoners as well as three huge ammunition dumps which the Germans had just prepared for their counterattack. With this initial success Sakharov and Scherbachev pressed forward toward Lemberg and the Dniester, capturing large numbers as they advanced. By 15 August Brussilov's line was straightened out and the second stage in his offensive came to an end. The magnitude of his success may be measured by some figures and by the desperate efforts which Hindenburg took to save the situation. In the 10 weeks of his extraordinarily

successful offensive Brussilov's armies had advanced from 30 to 60 miles on a 300-mile front, thus occupying 15,000 square miles of territory, as may be seen in the shaded area on the map. He had captured 7,754 officers, 350,000 men, 405 heavy guns, 1,326 machine guns, and vast stores of ammunition and supplies. As the Austro-German killed and wounded probably more than outnumbered the prisoners they lost, he may be said to have virtually annihilated the force which stood opposed to him when he began his offensive on 4 June. To meet the crisis, Hindenburg had transferred 15 divisions from the Western Front, where they had been sorely needed to check the Somme offensive; 16 infantry divisions and three cavalry divisions from the Eastern Front north of the Pripet; seven Austrian divisions from the Italian Front, where they could ill be spared as Cadorna was about to begin his counter-offensive; one division from the Balkans, and two divisions from Turkey. These reinforcements, which Hindenburg hurried forward with his usual vigor and resourcefulness, began to restore the balance by the middle of August.

At the same time Brussilov's offensive began to slow down in an ominous way. We know now that he was beginning to suffer from the same handicap as in 1915 — lack of ammunition. He had shot away too quickly what had been accumulated with such difficulty during the winter of 1915–16. Worse than that, he had exhausted his reserves, for his success had been won only by a prodigal expenditure of manpower. The Germans claimed 264,000 prisoners, and if we estimate that the Russians who were the attacking force lost twice as many in killed and wounded as in prisoners, this means that Brussilov had lost three-quarters of a million men in those 10 weeks. They could not be replaced rapidly enough to continue the offensive which he had begun so brilliantly. Moreover, many Russians had been used, unwisely as it seems, in an abortive offensive north of the Pripet; this was meant to take advantage of the fact that the Germans had withdrawn so many men from that part of the front; but it was not undertaken on a large enough scale to insure success. It merely used up reserves which could have been employed to better advantage south of the Pripet. It began to be clear that Brussilov had undertaken a task for which Russian resources were again to prove inadequate.

Thus in September 1916 Brussilov's summer offensive, which had begun so brilliantly, gradually died away. As the rainy and stormy weather came on he had to settle down in the trenches along the line which he had won by the middle of August. His great offensive, together with that of the Allies on the Somme, had failed to crush the Central Powers to submission. Except as he had drawn valuable German troops from other fronts his victorious advance was to have no permanent value in the future; for all that he had won, and far more in addition, was surrendered almost without a struggle in the next summer, when the Revolution and the Bolsheviki brought on a total military collapse in Russia.

10. Revolution and Military Collapse in Russia, March–July 1917.— The murder of Rasputin, the overthrow of the traitors around the tsar's throne, and the triumph of the Liberals and the Patriots, which resulted in the almost bloodless Revolution of March 1917, seemed at first a great advantage for the Allies. Autocracy at last was overthrown and Russia seemed whole-heartedly to have joined in spirit and in fact the great democracies of the West. But almost immediately the results of the Revolution were seen to have disastrous effects upon the discipline and efficiency of the army. Alexeiev, Evart and many other tried officers were dismissed "by the voice of the people," and inexperienced or incompetent men were put in their places. Capital punishment was abolished as the penalty for desertion, treason and other military crimes, with the result that officers could no longer maintain discipline. Agitators and demogogues, who had never smelt powder and had lived quietly in the interior cities, began to appear among the soldiers at the front. They harangued groups of soldiers, in defiance of the officers, telling the men that they had the right to choose their own officers; that now that tsarism and imperialism were overhrown it was no longer necessary to fight at all; that only the capitalists wanted a continuance of the war; that now the time had come for the soldiers to return to their homes and enjoy their new freedom by dividing up the land of the nobles and the government. Soldiers began to desert by thousands, for no one wanted to remain in the ranks if lands were going to be divided up at home in his absence. Soviets, or Councils, of soldiers began to be formed everywhere and to assume an authority which should have belonged to the officers and the high command. General Gourko, who had become commander-in-chief, soon after the Revolution, exercised great tact and did his best to preserve some semblance of discipline. He attended meetings of the Soviets, and wherever he was personally present was able to dominate the meeting by his personality and to hold the soldiers to their duty by his patriotism and arguments. But it was a hopeless task to try to neutralize the influence of all the agitators.

At the same time the Germans were quick to make the best of the situation. Instead of beginning an offensive with guns, they began an offensive with propaganda. Pamphlets in favor of international socialism and other forms of pacifism were showered upon the Russian line. Russian outposts were invited to fraternize with their German "brothers." Hopes of a speedy peace and an end of the horrors of war were held out. The "democratization" of the Russian army was having such a demoralizing effect that it was only a matter of weeks before the Germans would find no fighting force worth the name to oppose them at all. Under these alarming conditions the Russian commanders made most urgent appeals to the provisional government to take steps to restore discipline. Brussilov, Kornilov, Russky, Gourko and many other most notable and able officers threatened to resign in a body if something were not done.

At last in May 1917 when Guchkov had been succeeded by Kerensky as Minister of War, some real efforts were made to restore morale and discipline. The death penalty was reimposed and it was decided that one of the best ways of restoring discipline and vigor to the army would be to undertake an offensive.

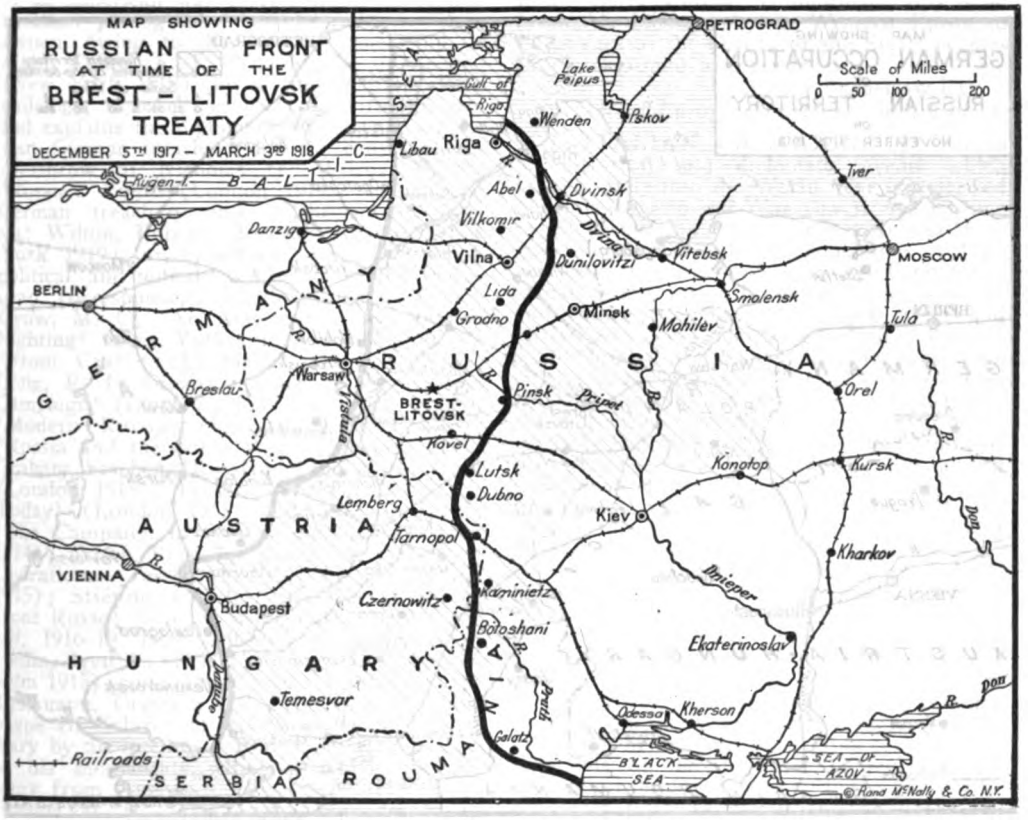
Thereupon Kerensky in his official position as Minister of War made a tour of the front. With impassioned and burning speeches he besought the soldiers to stand fast against the treacherous Germans and defend their new-won freedom. He pointed out that to cease fighting before the Allies had triumphed in the West would be an act of dishonor for Russia and of disaster for democracy everywhere. Russians would soon find that they had merely exchanged a Romanov for a Hohenzollern despot. He spoke with the sincerity of conviction and usually provoked a temporary enthusiasm among his hearers. But in some places the poison of Bolshevism had sunk so deeply that his speeches were received with mockery and derision. At Riga a soldier in the trenches started to enter into a dispute with him; whereupon Kerensky screamed at him: "Hold your tongue when the Minister of War is speaking to you." At other points he found it prudent not to attempt to speak at all.

It was finally decided that the offensive which it was hoped would restore discipline and patriotism should begin at 9 A.M. on Sunday, 1 July 1917. It was to start from the front in Galicia which Brussilov had won the year before. Its strategic aim was to capture Lemberg and Stanislav. If this started well a secondary offensive would be undertaken in the north toward Wilna for the recovery of Lithuania and the Baltic provinces. The hours during the fierce bombardment which preceded the time set for the infantry to go over the top were nerve-racking moments for the officers. No officer felt sure that his men would obey the command to advance. One of the corps commanders was seen silently praying during the fateful minutes preceding the appointed hour. Would his men go over the top or not? He hoped so, but he could not feel sure. When, punctually at 9 A.M., his troops swarmed over and the attacking masses rolled forward, the general devoutly crossed himself. But all the generals were not equally fortunate. Many mutinies broke out on the eve of the attack. In many places the Soviets of soldiers, instead of obeying instantly the command to advance, would sit down and debate the wisdom or desirability of the orders given them; and the result of the debate was that too often they concluded not to do what they had been told. This new idea of "liberty" and the wholesale desertions from the ranks was soon to nullify in less than a fortnight all the preparations and efforts of the government and the officers to make the July offensive a success.

However, the offensive started auspiciously at the outset, considering the circumstances. It showed that there was still a real fighting spirit in a great many of the Russian soldiers. This was further shown by the formation of many "Battalions of Death" and by the enlistment of battalions of women. During the fighting of 1 and 2 July Kornilov's men made good progress toward the Stanislav-Lemberg Railway. Altogether the Russians on the Galician front took 20,000 prisoners and over 100 guns in the first two days of fighting. This was due in part to the fact that the Russians outnumbered the enemy two to one and that they were stiffened by the presence of a considerable number of British and Belgian armored cars. There were also a good many French and British aeroplanes, though not enough to cope with the Germans. The Russian airmen also did excellent work themselves and were well-supplemented by balloon observers. Moreover, there was an abundance of artillery of all calibres, trench mortars, machine guns and especially of ammunition. Never had the Russian army been so well equipped. But instead of improving with action and success, the Russian soldiers grew daily less reliable. Divisions voted that they would not remain in the front-line trenches more than 24 hours, and only so long on the condition that they would be strictly on the defensive and not ordered to attack. When the Germans began to rally for a counter-attack, Russian units deliberately disobeyed their officers and even retired from the line, thus opening dangerous gaps which weakened the morale of neighboring units. By 20 July the whole Russian front in Galicia was completely demoralized and in disorderly retreat. The Germans and Austrians did their best to complete the demoralization by attacks on the retreating rear — engagements which were misrepresented in the German bulletins as "hard-won battles." The details of this dismal collapse of the last Russian offensive need not be given. By August all that Brussilov had won in 1916 was lost, almost without a blow. The Eastern Front was pushed back to the position which it held in the winter of 1915–16. Such were the early effects of Bolshevism upon the army. It was a very bitter situation for the officers, the Liberals and the true friends of the Allies in Russia. But they could do nothing. Patriots like Gourko and Kornilov who tried to stem the tide of demoralization and to back up their arguments with the threat that they would resign, were arrested and imprisoned as dangerous traitors to the new Russian republic.

11. The Disappearance of the Eastern Front in Chaos, 1918–19.— On 1 Sept. 1917 a further change in the military situation came through the easy German capture of Riga. A German fleet shortly afterward occupied the Gulf of Riga and enabled the Germans to establish a foothold in Esthonia and Livonia. From their new position in the Baltic provinces the Germans were able to threaten the Russian capital, Petrograd. But Germany did not want to use the Russian military collapse as an occasion to make a military conquest of Russia. She wanted peace on her Eastern Front so that she could transfer her armies to the Western Front where the ultimate issue of the war would have to be decided. Moreover, it was not necessary to conquer Russia by armies in order to dominate Russia politically and economically. This kind of a domination could be better secured by the indirect means of creating little puppet states, ruled or controlled by German princes, politicians, merchants and capitalists, and dependent on German armies for their existence. In fact, in the autumn of 1917, there loomed before Pan-German eyes a far greater dream of Eastern empire than was conceived of in the Bagdad Railroad project, which meanwhile was receding into the background of German hopes owing to Allenby's victories in Mesopotamia and Palestine. Instead of the Bagdad Railway there swam before German eyes the grander prospect of controlling all of

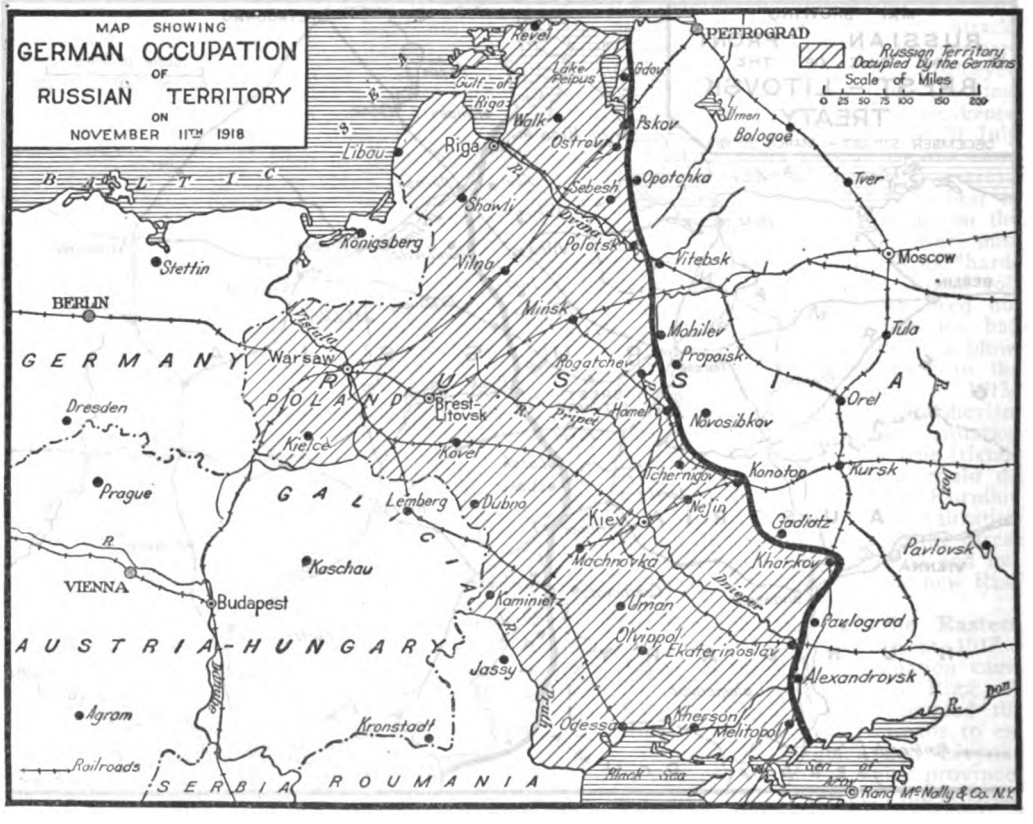
western Russia, through the small states of Finland, Esthonia, Letvia and Poland; all of the rich grain lands and the coal, iron and other minerals of southern Russia through the puppet-states of Ukrainia, Georgia, Transcaucasia and others. Thus would Germany come into touch with China and Persia and threaten once more the English control in India. This great dream raised high German hopes and led to the negotiations with Lenin and the Bolsheviki which resulted in the infamous Treaty of Brest-Litovsk of 3 March 1918. This treaty



was based on the deceptive formula of "no annexations, no indemnities, and self-determination." But by the terms of the treaty, as interpreted by Germany, the Bolsheviki under "no annexations" allowed Russia to be virtually deprived of 26 per cent of her total population, 27 per cent of her arable land, 37 per cent of her average crops, 26 per cent of her railway system, 33 per cent of her manufacturing industries, 73 per cent of her total iron production and 75 per cent of her coal fields. Under "no indemnities" they saddled Russia with a gigantic but as yet uncollected payment by way of war tribute, with a promise of free export of oil, and an unfair commercial treaty. Under the guise of "self-determination" 55,000,000 former subjects of the tsar were handed over against their will to the practical control of German agents. The Russian soldiers were withdrawn to fight a civil war within Russia against the forces of law and order which were opposed to the Bolsheviki. So Russia fell into chaos at home and the Eastern Front ceased to exist. Germany was able, as she had calculated, to transfer the best part of her troops to the Western Front to take part in Ludendorff's last great effort to reach a decision by breaking through the Anglo-French line to the channel ports or to Paris.

But fortunately for Russia the Peace of Brest-Litovsk was not to be allowed to stand. Three factors overthrew it: (1) The 55,000,000 Finns, Esthonians, Letts, Lithuanians, Poles, Ukrainians and others saw through the veil of German deception. They refused to be bound by a treaty which they had no share in making and which was contrary to their interests. The Liberals or "Whites," in Finland and Esthonia waged a determined war against German domination. The Ukrainians murdered the German Ambassador and overthrew the German puppet, Skoropadski. The Germans soon found that it would be no easy task to maintain the domination which they had planned to visit upon these new nationalities. (2) The patriotic elements in Russia itself refused to accept the rule of the Bolsheviki and to recognize the treaty by which they had sold out Russia to the enemy. These patriotic elements gradually collected around Admiral Kolchak in Siberia; they established the so-called Omsk government with a view to restoring law and order by the holding of a constituent assembly which would give Russia a true democracy instead of a proletarian despotism. Several of the former loyal generals like Kaledine, Denikin

and Yudenich placed themselves in touch with Admiral Kolchak to work for the overthrow of Lenin, Trotsky and the whole Bolshevik group. The Allies also gave material aid. An Allied army landed at Archangel to protect the Allied stores of munitions, and to advance, if possible, to join up with Kolchak's army which was to move west into Russia from Siberia. The Archangel enterprise, however, was too small, was not vigorously pressed and did not find the support which it had hoped from the anti-Bolshevik element in northern



backed by the loyal elements in Esthonia and Letvia, and supported by English battleships, was advancing on the Bolsheviki in Petrograd. But these anti-Bolshevik forces were not successful. Foreign intervention seemed to have consolidated the power of the Bolsheviki and strengthened it instead of weakening it. The exercise of power and responsibility appears also to have made the Soviet government somewhat less violent and uncompromising. Recognizing this the Baltic States entered into negotiations with it in December 1919.

Russia. It had to be abandoned in the summer of 1919. Japan and the United States also sent munitions and troops to Vladivostok to protect the munition supplies there from falling into the hands of the Bolshekivi. They were also to aid Kolchak by giving support to the Czecho-Slovak soldiers in Siberia, by keeping open the Trans-Siberian Railway, and by protecting supplies which were to be forwarded to Kolchak and the Omsk government. (3) But the great and deciding factor was the entrance of American soldiers upon the Western Front, the failure of Ludendorff's last effort, and the defeat of Germany which resulted in the armistice of 11 Nov. 1918. With Germany beaten, the Allies expressly provided in the Peace Treaty of 28 June 1919 with Germany (Art. 116) that the Brest-Litovsk Treaty should be abrogated.

In November 1919 Kolchak was advancing on the Bolsheviki in Moscow from the east and Danikin from the south, while Yudenich,

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7. ITALIAN CAMPAIGN. The chain of historical and diplomatic events which brought Italy into the World War is described under ITALY AND THE WAR (q.v.). At the time of the declaration of war against Austria-Hungary on 23 May 1915 the population of Italy was estimated at a little over 35,000,000. The Italian Army, raised by universal conscription, had a peace strength of about 15,000 officers and 290,000 men and a total war strength of roughly 3,270,000 men, of which number 1,070,000 were only partially trained. The able-bodied men annually recruited for service were divided into three sections, partly by exemptions and partly by lot. The first lot — about one-third of the whole — were fully trained; the second undergoing a recruit course and a few repetition courses in later years, and the third performing no service at all. The full period of service was two years with the colors, six years on forlough, and four years in the mobile militia (consisting of fully-trained reservists only). In recent pre-war years large numbers of the last class were called up for brief "refresher" trainings (see ITALY — THE ITALIAN ARMY). At the outbreak of war there were 12 army corps, each composed of two infantry divisions (in the Rome district three). The organization of the permanent army comprised 96 regiments of line infantry, 12 regiments of Bersaglieri (sharpshooters), and eight Alpine regiments (Alpini), in all 389 battalions; 150 squadrons of cavalry; 263 horse, field, mountain and heavy batteries; and 190 companies of fortress artillery and technical troops. On mobilization a division of mobile militia was added to each corps, bringing its strength up to 37,000 men and 134 guns. Each division comprised two brigades of infantry and a regiment (five battalions) of field artillery. The brigade contained two regiments, and the latter three battalions each. A cavalry division comprised two brigades of two regiments each, and two batteries of horse artillery. On peace footing there were 29 cavalry regiments. The Bersaglieri, with the picturesque feathers on their hats, were the light infantry. A regiment of four battalions of these troops — three of infantry and one of cyclists — was attached to each corps. Six battalions of Carabinieri formed a military police force recruited from the regular army, while the Alpini (26 battalions of the first line, with 36 batteries of mountain artillery) were special frontier troops for the defense of the northern borders. To

some extent the line regiments suffered from having their best men taken for the select corps of Alpini, Bersaglieri and Carabinieri. Altogether, the available field force may be estimated at over 1,000,000 trained men, with a reserve of about 2,000,000 in the territorial militia, the third class, with normally only 30 days' training. The infantry was armed with the six-millimeter Mannlicher-Carcano magazine rifle, pattern 91. A part of the territorial militia still had the Vetterli-Vitali, model 70/87. Officers were equipped with sword and automatic pistol. The Italian field artillery was at the time in process of re-armament. It possessed about 100 field batteries armed with the 75-millimeter Krupp quick-firing field gun, a large number of Krupp howitzers, siege and fortress guns, and siege trains of very large calibre.

The Italian navy, which had gained considerable experience during the Tripolitan War of 1911–12, consisted at the outbreak of war of six dreadnoughts launched between 1910 and 1913, and two more were nearly completed, as against four vessels of that class belonging to Austria. The Italian dreadnoughts were superior in speed and gun power. All were armed with 12-inch guns. Italy also possessed eight pre-dreadnought battleships under 20 years of age and three over, all heavily armed, of good speed, and well protected; 10 armored cruisers, all but one under 20 years old, as against only two on the Austrian side; and 16 light cruisers, nine being over 20 years old; 33 destroyers (and 10 building); 65 torpedo boats and 19 submarines. The total naval personnel before the war was about 40,000. The Italian aviation arm was far superior to the Austrian, both in quality and quantity. Already, in August 1914, Italy had a greater aeroplane fleet than Great Britain, namely, 25 *squadrille* (of seven machines each) in Italy and three *squadrille* in Africa — about 200 machines. During the nine months of neutrality the Italian government had been building and buying aeroplanes and training pilots at a great rate, so that in May 1915 the country was well supplied with all kinds of aircraft — Curtiss waterplanes and flying-boats, Borel monoplanes with floats, Breguet seaplanes, Bossi flying-boats, Savoia-Farman seaplanes, and some half-dozen Italian-built and two German-built dirigibles. Though strong in her naval and aerial branches, Italy had no land army in the modern sense when the war broke out in 1914. She had men, rifles and field guns, and not too many of the last. Many gaps in organization were filled up in the period of neutrality, but it was impossible to bring the equipment up to the required standard. Italy's industrial resources were strictly limited and not easy of development. The country produced neither coal nor iron, and the output of her steel works was small. Nor was it easy to supplement deficiencies from outside. England, France and Russia had earlier calls on neutral resources and Italy could only secure, so to speak, the leavings. For a year at least after entering the war Italy had to rely on the heroism of her soldiers to make up for lack of munitions.

General Count Luigi Cadorna (q.v.) was appointed commander-in-chief of the Italian armies in the field, with General Porro (q.v.) as his chief of staff. The Duke of the Abruzzi (q.v.) was placed in command of the High Sea Fleet; and his two brothers, the Duke of Aosta and the Count of Turin, held respectively the ranks of lieutenant-general and inspector-general of the cavalry.

With an extensive coastline of over 4,000 miles to protect (including Sicily, Sardinia, Elba, etc.), Italy has numerous fortified places on the coasts and islands. Spezzia, the principal naval port, stands near the head of a commodious bay, 56 miles southeast of Genoa by rail. Formidable batteries bristle on the hills that overlook the bay and the island of Palmeria, which guards the entrance. Here the large Italian warships are built, repaired and fitted out. Taranto, at the southeastern extremity of Italy, is an important naval base and arsenal. A fleet operating from this base guards the entrance to the Adriatic. Ancona, on a promontory of the Adriatic, 127 miles southeast of Ravenna by rail, was formerly a government arsenal and contains shipbuilding yards and engineering works. Other fortified places are Genoa, Vado, Gaeta, Monte Argentaro and some works in the Straits of Messina, while there are also bases at Naples and Venice for building and repairing ships.

The naval situation in the Mediterranean underwent a marked change in May 1915. During the preceding month the French fleet had entered the Adriatic with the object of rounding up the Austrian fleet if it were at sea. French battleships steamed up on the Italian side and, crossing the Adriatic, approached Cattaro, the Austrian naval base, from the north, while cruisers and destroyers advanced up the eastern shores. This movement resulted in the discovery of only three enemy warcraft — the small cruiser *Zenta* and two destroyers. The two latter fled and the *Zenta* was sunk. A subsequent bombardment of Cattaro apparently produced small results. Blockading forces were meanwhile established in the Otranto Channel, and the enemy was thus cut off from all sea communication with the outside world. The French fleet was still blockading this port when Italy entered the war, but it labored under serious disadvantage owing to the distance from its nearest base. The disadvantage was somewhat modified, though not removed, when the British admiralty placed the naval establishment at Malta at the disposal of the French authorities for refitting and repairing their ships. The entrance of Italy as a belligerent, with bases closer to the scene of operations, suggested a reconsideration of the naval position; and thenceforward the Italian navy, supported by several British and French units, became responsible for the blockade.

Natural conditions in the Adriatic were overwhelmingly favorable to Austria-Hungary. This land-locked sea, approximately as long as the North Sea, has a mean breadth of about 100 miles. On the Italian side the water is shallow and for many miles southward of Venice there is no single port suitable for a naval base. On the Austrian side the Dalmatian coast and Trieste presented a series of deep-water ports, fringed by a number of islands offering shelter to torpedo craft and even larger ships engaged in cross-raiding. The Austrians took advantage of the geographical position when Italy entered the war. In accordance with a scheme that was evidently

prepared in advance, units of the Austrian fleet, including battleships, began to terrorize the Italian population along the shores of the Adriatic, where the towns and villages were devoid of defenses against bombardment from the sea and by aircraft. The Italians, however, soon devised an effective reply. Close to the waterside, a railroad runs all the way down their coast. Armored trains were speedily equipped and manned by naval gunners; scouting operations by small naval craft and aeroplanes provided a satisfactory check on these raids and forced the Austrian fleet to inactivity, confined within the shelter of elaborate minefields dominated by powerful coast artillery and supported by flotillas of destroyers and submarines.

A more complicated problem presented itself on the Italo-Austrian frontiers. Here was a huge rampart of natural and artificial strongholds winding a snake-like course of 484 miles, a battle-front exceeding any other in the war for almost insuperable obstacles. All the disadvantages and handicaps of strategy, geography and climate fell to the Italian side. Austria held the crests of the Alps, the heads of the principal valleys, all the Alpine passes and all the crossings of the Isonzo. From Switzerland to the Julian Alps the frontier followed the crests of the hills at an elevation of 7,000 to 10,000 feet, while a mountainous zone separated the frontier from the plains. Between the Julian Alps and the Adriatic there were no natural obstacles to prevent the advance of armies on a broad front. Thus Italy's northern front fell into three distinct sectors — the first of high mountains, forming the re-entrant angle of the Trentino; the equally formidable wall of the Dolomites and the Carnic and Julian Alps, and the space on the east between the main Alpine chain and the Adriatic.

The Trentino, somewhat detached from Austria, was connected with it by the Pusterthal and the Brenner Pass, by which two routes alone there is railway communication. Mountain buttresses protected the Trentino salient, and an enemy attempting its conquest would have to advance mainly by the Adige Valley, only to be confronted by the strongly-fortified town of Trent, after overcoming which he would have to struggle through a wilderness of lateral valleys and subsequently force the main ridge of the chain at the Brenner Pass. Flank attacks on the containing wall of the Trentino were all but impossible, for Austria had converted it into an immense fortress bristling with guns. High up in the hills on the western side lies the Stelvio Pass, the highest carriage pass in the Alps, over 9,000 feet above sea-level. Here three frontiers meet among the clouds — Swiss, Italian and Austrian. Farther south, below the Ortler *Massif*, lies the Tonale Pass, offering no better passage for a large army. The frontier described the form of a huge horseshoe around nearly the northern half of Lake Garda and passed through the lake near its northern end. That little piece of the lake was in Austrian territory. Here the Italians quickly introduced a flotilla of gunboats and bottled up the Austrians in their narrow end of the lake. This little "squadron" patrolled the treacherous waters of Garda at all times and in all weathers, braving those sudden hurricanes — equal to anything on the open sea — for which the lake is notorious. Italian trenches and barricades of barbed wire ran from the Stelvio Pass down to the water's edge of the lake, continuing on the opposite shore and eastern side of the salient, where conditions were still worse for invasion from the Italian side. The passes of the Dolomites offered no route northward to the Pusterthal. Thus the Austrian position in this sector consisted of a hollow headland of mountain jutting into the Italian plains below, a barrier that was strengthened by the deep depression of Lake Garda, as it compelled an attack from the Italian plain to be made from distant bases east and west of the lake.

The next section of the Austro-Italian front — the Dolomite and Carnic ranges — formed a vast barrier of ramparts. Through the main pass, Ampezzo, runs the great highroad known as the Strada d'Alemagna (over 5,000 feet high) from Belluno to Toblach. In part it is a mere defile threatened by many danger points, while a number of passes farther eastward are mere bridle-paths, and there are none of military value to the southeast. On the Austrian side the Carnic Alps needed no fortifications, but at Tarvis there were military works to defend an approach from the Tagliamento to the Drave and to support (on the right) an Austrian concentration on the Isonzo. Tarvis was also an important point in the event of an Italian offensive against Vienna. Some old forts at the Predil Pass and Flitsch farther south had been modernized by Austria, thus making the Isonzo a powerful defensive position. Behind this the lines of the Save and Drave still remained to cover the approaches to Gratz and Vienna. The third portion of the frontier was the low-lying ground between Cividale and Lake Marano, a narrow front barely 30 miles wide, protected from behind (on the Austrian side) by the Isonzo line and some six miles of plain in front of Gorizia.

For many years the chief military interest of Italy was her northwestern frontier facing France, while the Austrian borderland was somewhat neglected. In late years, owing to improved relations with France, the situation changed and the centre of politico-strategic gravity shifted to the northeastern frontier, where considerable work was carried out to prepare Italian troops and railroads for war on that side. Fortifications on a moderate scale existed before the war; the road from Stelvio Pass was barred by the works at Bormio, and from the Tonale Pass by others at Ponte di Legno, while Rocca d'Anfo guarded the exit from Giudicaria. The chief Italian frontier fortress in this theatre was Verona; other fortified zones of assembly had been prepared on the Adige and the Tagliamento. The Astico group of defenses, nearest Verona, extended from Arsiero to Asiago and connected with the works of Val Logra and San Pietro on the frontier. Several forts lay scattered along the upper Brenta and upper Piave, while farther east efforts had been devoted to the Tarvis line and the railroad from Osoppo to Pontebba. Thus the Italian covering troops on the frontier had generally strong support behind them; assembly positions had been organized for both offensive and defensive operations; the left flank of Italian armies in Venetia had been made fairly secure; and finally, operations toward the upper Adige and the Pusterthal had been facilitated.

The general idea originally was that the Italian armies might assemble behind the Brenta with their flanks resting on Venice and Verona, and that as they advanced eastward their left would be secured by troops and works in the upper valleys of the rivers. With these leading ideas the railway policy of Italy in general conformed. Of great importance, also, was the question of the seasons. The average Alpine pass is only free from snow for about five months in the year, and the mule-tracks over the highest *cols* (defiles) for not more than three months. Before the French Revolution it was not the custom for armies to begin operations in the Alps before July, and usually those armies went into winter quarters at the end of October. Later on, lower and more accessible sectors of the Alps were crossed between April and December, and the higher Alps between May and November. It has been said that there is no prospect on earth quite like the immense irregular crescent of serrated peak and towering mountain wall that is thrown around Italy on the north, as it unrolls itself from the plains of Lombardy and Venetia. In the teeth of the Austrians — and of nature, as it were, as well — the Italians carried the line of entrenchments across wooded hills, meadows, torrents and snow-clad slopes. In many places the trenches had to be blasted out of the rock, and were reinforced with concrete or anything that military science or nature could offer to render them invulnerable. The outstanding feature of the campaign when it opened was that the Italians were always going up while the Austrians only needed to come down. The former were below, and the latter high above on that immense natural rampart of mountains. The possession of the Trentino or Italian Tyrol was a matter of vital importance to Italy. The kingdom was protected by the powerful mountain barrier against invasion from France and Switzerland. But by retaining the Trentino after withdrawing from Italy in 1866, and by occupying the mountain passes down to the foot of the mountains as far as Lake Garda, Austria occupied with her army a wide breach in Italy's defense. The Austrians could thus easily invade the country and strike at Verona, Padua and Venice by marching to the east, or at Brescia and Milan by turning to the west. The positions held by Austria in the Trentino, in Istria and in Dalmatia were largely inhabited by Italians who suffered severely under Austrian rule: the short-sighted policy of Austria had earned her the bitterest hatred of the Italians.

A royal decree was issued from Rome on 22 May 1915 ordering the general mobilization of the army and navy. A supplementary mobilization order called up the third category of the service classes from 1885 to 1895 — men who had not received any military training. Eleven provinces were declared to be in a "state of war" from the 23d, as well as the Adriatic coastlands, islands and all fortresses. All Austrian ships lying in Italian harbors were immediately sequestrated. War was declared at midnight, and the step was followed by a prompt advance on the part of the Italians across the Austrian frontiers in southern Tyrol, Carnia and Friuli. It was soon apparent that the main military effort would be made against the line of the Isonzo, which had been heavily fortified by the Austrians, and that while converging attacks would be initiated upon the Trentino, a determined effort would be made to seize all the crests of the Alps which had been left, after 1866, in Austrian hands. The lack of branch railroads made it necessary to concentrate the Austrian offensive at certain defined places, namely, Trent, Tarvis and Gorizia: conversely, an Italian offensive must aim at the same points — and at one more: the junction of the Pusterthal line at Franzenfeste. If that point could be taken the communications of the whole of the Trentino salient would be cut. But this was just the hardest point for the Italians to reach, as the whole complex system of the Dolomites lay to the south and east of it. Briefly put, General Cadorna's plan was to hold on the north and push toward the east, Trieste, where the southern sector offered the best prospect for the development of a big offensive. Here the natural obstacles were much less formidable. At 3.30 in the morning of 24 May 1915 the first act of war took place at Venice. The inhabitants were aroused by the booming of guns and screeching of sirens. Austrian (or German) aeroplanes, flying at a great height, dropped bombs on the sleeping city, a storehouse of art treasures. Austrian battleships bombarded the Italian coast from Venice to Brindisi.

Austria at the moment was preoccupied with Galicia, retrieving a long series of disasters with the aid of German troops under Mackensen. Not unprepared for the Italian attack, Austria had long maintained a strong army on the southern front, composed principally of Landwehr and Landsturm, among the latter some levies of Tyrolese mountaineers. This army was commanded by the archduke Eugene and Gen. Conrad von Hoetzendorf. It was not until three-fourths of Galicia had been reconquered from the Russians that Austrian troops were withdrawn from that theatre and placed opposite the Italians. Within a few days after commencing operations the Italians had seized some important mountain positions in the Trentino as well as others toward Trieste; on 2 June they were crossing the Isonzo and establishing themselves on the slopes of Monte Nero, north of Tolmino. They won all the lower passes of the Dolomites and made breaches at the Tonale Pass and in the Carnic and Julian Alps. They occupied the Montozzo Pass (9,585 feet), Ponte Caffaro and Monte Baldo on the Trentino front, the Dolomite valleys and several footholds in the Carinthian Alps. On the east the Italians were on Austrian soil almost up to the Isonzo. The mountain troops of the Bersaglieri performed remarkably strenuous feats in dragging heavy artillery to the tops of snow-covered peaks and driving Austrians from apparently impregnable positions. Italian destroyers shelled Monfalcone near the northern head of the Gulf of Trieste 31 May; it fell on 9 June and two days later the Italians had taken Gradisca. On 2 July a severe struggle began for the Carso Plateau, the highway toward Trieste. At the same time vigorous attacks were launched against Gorizia on the Isonzo, along the banks of which the Italians maintained a strong pressure from Tolmino to the sea below Monfalcone. Simultaneously blows were delivered farther north,

and Fort Malborgetto in the Carnic Alps was bombarded. The Austrian second line east of Gradisca was under fire by 30 July, while aerial raids harassed the railway to Trieste. But progress was slow and difficult, and it was not until 22 October that the Italians were able to make a substantial advance on the Isonzo sector, when over 5,000 prisoners were taken in a week. The crests along the Alpine front fell one by one to the Italians; some progress was made in the Trentino, but the subsequent operations were restricted to that and the Isonzo fronts until the end of the year, by which time there were nearly 500,000 Austrian troops chained down to a mere passive defensive.

During November the offensive continued, renewed repeatedly, until in the first week in December a Scottish mist — *nebbia Inglese*, the Italians called it — settled down and lay immovable over the front, and the Italians admitted reluctantly that the capture of Gorizia must wait. Some other important events had happened during the first months of Italy's war. Although Italy had not declared war on Turkey, hostilities had been begun in Asia Minor against the numerous and prosperous Italian colonies. The repatriation of Italian subjects was prevented and their property was not respected. Italy declared war on Turkey 20 Aug. 1915 and adhered to the Pact of London, 1 December the same year. On 2 October Bulgarian troops appeared on the Serbian frontier; on the 4th Russia sent an ultimatum to Bulgaria; on the 6th an Austro-German army invaded Serbia; Belgrade was occupied by them on the 9th; by the 18th Bulgaria was at war with Serbia, Russia, France, Italy and Great Britain. The Entente Allies' horoscope looked black indeed during the late summer of 1915. The Russians had been defeated in Galicia; Warsaw fell to the Germans on 4 August; Great Britain and France had suffered some 112,000 casualties on the Gallipoli Peninsula; Serbia, now overrun also by Bulgarian troops, was in a most desperate position. Treaty obligations bound Greece to come to the aid of Serbia against Bulgaria; when that assistance was asked for (11 October), it was refused. Serbia's only hope lay in the success of a possible countermove from Salonica, but there was only a small force of less than 15,000 French and British troops stationed there, in imminent danger of being themselves attacked by the Greeks. The Allies could thus render no aid to Serbia. When Uskub fell to the Bulgarians on 25 Oct. 1915, the doom of Serbia was practically sealed. By the middle of November that nation had nothing left to defend of its own territory, and the broken remnant of its army struggled painfully through the mountains of Montenegro toward Scutari and the port of San Giovanni di Medua on the Adriatic, while another column was in full retreat toward Durazzo. Two circumstances alone saved them from extermination, namely, that the Austro-German forces did not heavily press the retreat, and that Essad Pasha (q.v.) in Albania had definitely declared himself in alliance with the Entente Powers. Besides the Serbian troops the train of stragglers included many Serbian families, women, children and old men, toiling on foot over snow-clad mountains and through foaming torrents. Many died by the wayside. This was the situation which the Italian navy was called upon to face in the dark days of December 1915 — the feeding, clothing, disinfecting and healing of the survivors of an heroic little nation, some 200,000 all told. They had all to be conveyed across 40 miles of water sown with floating mines and open to submarine and destroyer attack, as well as aerial bombs. Between them, Italy, France and England supplied the necessaries of life. As only small ships could enter the harbors of Medua, Durazzo and Valona, marshes and rivers had to be bridged, but finally the refugees were safely carried to the genial climate of Italy for recuperation. While the great task of rescue was in progress at Valona, troops were pushed up into the surrounding country and a strong detachment posted to guard the hills around the harbors of Medua and Durazzo. According to an eyewitness, early in December there "began to trickle down the Montenegrin and Albanian heights the forerunners of such a flood of famished, dirt-engrained and pestilence-stricken humanity as can seldom have been seen in the Christian era." From parties of twos and threes the stream swelled to hundreds and thousands. Day and night the naval and military doctors, with soldiers, sailors and orderlies worked among the victims to alleviate their sufferings. Nor was this the only contribution of the Italian navy to the Entente cause during the early stages of its activities. Already in July it had converted the whole of the Adriatic into a close controlled military area like the North Sea; it had forced the Austrian navy to undertake only furtive operations, carried out air raids, and effected several landings on the opposite shore. Marines had been landed at Valona already in 1914, seven months before Italy entered the war.

The rather easy advance of the Italians during the first few months made it appear as though the Central Powers were willing to let Italy seize the particular territory which she wanted from Austria, a quite logical conclusion, since, if Germany and Austria were defeated, Italy would get that territory anyway; whereas, in the opposite case, Italy would lose the conquered lands again at the peace table. While the Italians maintained a more or less defensive attitude on the Trentino front, it was against the Isonzo line that their main efforts were concentrated. In that direction lay the road to Trieste, and Gorizia was the key to the situation, for it stood in the way of any real advance across the Carso (German, *Karst*) Plateau. Gorizia, furthermore, was a formidable entrenched camp defended by 200,000 men, and its flanking positions showed a width of over 60 miles. A steady pressure was kept up during the winter along the whole line; Italian gains were made at several points, some thousands of prisoners were taken, and 25 Austro-Hungarian divisions kept employed. At the end of November continuous rains flooded the country and thick fogs paralyzed the action of artillery. But the Italians dominated the Isonzo from the northwest of Gorizia, so that the bridge-head at that place could no longer be used as a starting point for an offensive action by the Austrians. By the end of the year the Italians had taken 30,000 prisoners, five guns, 65 machine-guns, many bomb-throwing mortars, thousands of rifles and much ammunition.

No outstanding events occurred on the Austro-Italian front during the first quarter of 1916. With the advent of spring hundreds of thousands of laborers began to arrive on the scene and were put to work under the engineers. This army of brawny if unskilled labor represented the annual emigration from Italy to other countries. Under engineer supervision they built roads, light railways, barracks, bridges; they bored trenches out of the solid rocks, scooped underground galleries of immense size and number, and constructed an elaborate system of aerial railways from peak to peak along the mountain chains. Steam rollers and camions soon rumbled along the roads which some weeks before had been impassable for mud. Almost from the beginning of hostilities the Austrians had retired behind the Isonzo gorge, on the course of the river above Monte Sabotino. For two years this remained the general position, the Italians occupying the western bank of the gorge, the ridge of Monte Planina and Monte Corada.

Hostilities were resumed about the middle of March 1916 in the hill country. In the previous November a bold round-topped spur called the Col di Lana had been captured west of the Falzarego Pass by Italian troops under Col. Peppino Garibaldi, but the summit could not be held while the Austrians retained their foothold on the northern slopes. After three months of strenuous labor the Italians had cut a tunnel from which to blast the enemy from his position. Before the end the Austrians grew suspicious and began counter-mining, but in the wrong direction. On the night of 17 April 1916 the mine was sprung by the Italians, and what was left of the Austrian position was carried by the bayonet. The explosion formed a crater 150 feet wide and 50 feet deep. On 27 March the Austrians attacked in force the heights northwest of Gorizia, and with such effect that the Italian centre was driven in. The position was, however, restored next day by a counterattack and the enemy effort was not renewed here. During April some daring exploits were carried out by the Alpini on the great Adamello Glacier to the northwest of Lake Garda, where 300 Alpini left the Rifugio Garibaldi on skis, climbed the glacier by night in an Arctic snowstorm 10,000 feet above the sea, and drove the Austrians from the rocks in the early morning. On the 29th 2,000 Alpini followed the same route and dislodged the enemy from the main crest, thereby gaining a position on the flank of the Austrian lines in the Val Giudicaria. Throughout the winter the Austrians had heavily strengthened that part of the Trentino sector between the Val Lagarina and Val Sugana, and had brought powerful batteries to the Folgaria and Lavarone plateaus southwest of the city of Trent. The Italians, though aware of the concentration, anticipated no more than a local attack. This sector was under the command of the archduke Charles, afterward Austrian emperor, who was preparing here one of the major offensives of the war.

Between the two *vals* above mentioned, through which the Brenta and Adige rivers respectively flow, lies a comparatively small area with a frontage of less than 30 miles, where the Austrians had collected some 2,400 heavy guns, including 40 12-inch Skoda howitzers, and several German naval guns. About 350,000 men were here concentrated to make a determined attempt to break the Italian line at this point and force a passage through the Alpine peaks to the Venetian plain. While the Italians were devoting all their thoughts and energies to preparations for a new offensive against Gorizia and Trieste, the Austrians gave them a nasty surprise where they least expected anything to happen. It is probable that Austria wished to forestall the very offensive the Italians were planning, for on 14 May a violent bombardment from the Austrian side blasted a gap in the Italian front lines, which had to fall back in the centre. Austrian infantry were thrown forward on the 17th; the Italian mountaineers put up a series of gallant fights, but they were outmanned and outgunned. By the 18th they had lost valuable ground and many prisoners. A fierce resistance at the southern end of the sector, at the Passo di Buole, however, saved the important strategical position at Monte Pasubio and prevented the crumpling up of the defenses and a probable Austrian dash through to the plains. On the 20th General Cadorna decided to withdraw his centre to a position well in the rear, a movement that was completed in good order by the 24th; but the Austrian rush did not permit the preparation of new defenses. By the 25th the Austrians were attacking Pasubio and Coni Zugna; and on the 27th they were south of Galmarara, a tributary of the Assa on the left. Next day they occupied a mountain north of Asiago and the Italians evacuated that town. Two days later the Austrians had driven a wedge between Pasubio and Arsiero along the river Posina still farther to the south. Eastward of Arsiero a terrific onslaught on Monte Cengio gained that position also for the enemy. General Cadorna had meanwhile brought up his reserves (the 5th Army) to assemble in and around Vicenza and prepared for his counterstroke. The greatest danger at the end of May was in the Astico valley, where the Austrians had captured the rock summits of Pria Fora and Cimone, and were pouring through Arsiero down the valley itself actually on the level of the great plain. The Italians had been driven far back behind their prepared lines and had no trenches nor fastnesses in which to make a stand; they fought the invaders hand to hand and by desperate fighting thrust them back over the precipices of Pria Fora. These actions saved Italy in the early days of June 1916. Arsiero was abandoned, and on 1 June an Austrian army order informed the troops that only one mountain stood between them and the Venetian plain. Within three days the Austrians were only 18 miles from Vicenza and the trunk line. On 7 June Cadorna announced that the enemy offensive had been checked. The new army had been equipped with guns and on the 12th a counter-offensive began in the Val Lagarina and on the Posina-Astico front. On the 13th a violent struggle raged around the last Italian position south of the Posina; the defenders lost 70 per cent of their men, and from the 15th to the 17th the Genoese troops on Monte Pau repulsed what proved to be the last of the great Austrian attacks. In the latter half of June the crisis passed; the Italians recovered ground on the Asiago Plateau, while a timely diversion was furnished by the Russian victory

in the Bukovina and the great British offensive on the Somme in France. What advantage Austria had gained on the Italian front she had more than lost on her own territory in Galicia. General Cadorna now began to dispatch men and guns back to the Isonzo front, in preparation for the great attack on Gorizia. Here we may leave them for a short space while we trace the activities of the Italian navy.

We left the Italian navy preparing to cope with the task of saving the remnant of the Serbian army and such of the civilian population of Serbia as had been able to make their way to the coast and survive the ordeal. Old King Peter himself, racked with rheumatism and almost blind, had made his way in disguise along the same rough road on horseback, accompanied by a few soldiers and officers. While the refugees were streaming into Medua and Durazzo, the Italians were preparing a great clearing-base for their reception at Avlona, 60 miles farther south, erecting hospitals and weather-proof huts. During December 1915 and January-February 1916 the tragic *finale* of the first Balkan campaign was enacted on the Albanian Coast. By the middle of January the Austrians had captured Cettinge and overrun Montenegro, and the defeated army of that little state was also in full retreat, decimated by hunger and disease. What was left of that army fought its way back to Podgoritza and Scutari, whither the government and the king and queen had already retired. The royal party was taken on Italian warships within a few miles of the Austrian port of Cattaro, together with the Entente diplomatic representatives. Scutari fell to the Austrians on 23 Jan. 1916; Medua followed shortly after, and there began a great general movement toward Durazzo, still thronged with refugees by thousands. For weeks the process of feeding, medical relief and systematic embarkation had been going on, subject to hourly perils of aerial, naval and land bombardment. Those who were sufficiently restored were marshalled into long columns and sent to Valona by the road which had been constructed by Italian engineers. All those unable to travel on foot had to be shipped from Durazzo to Valona, whence large steamers conveyed them to Italy, Corfu and Biserta in Tunis, where the French government had made preparations to receive them. Owing to Austrian pressure the position at Durazzo became untenable, and it was decided to evacuate the town on 26 February. There were yet 6,000 persons besides 1,300 wounded and sick to be removed. The Italian garrison of 2,000 men (reduced from 5,000) retired southward fighting rear actions and holding the enemy. The Austrians were dropping shells (from the land) on to the harbor quay, to which bombardment Italian destroyers replied. In the morning of 25 February the cruiser *Libia* entered the harbor, joined in the bombardment of the encroaching Austrian lines and succeeded in silencing several batteries. The heavily-laden transports having safely reached the sea, a party of marines was landed; other Italian cruisers arrived and an intermittent cannonade was kept up for that day and the ensuing night. On the 26th, the day of evacuation, rough weather prevailed on the sea and hampered operations. Twelve steamers and a hospital ship protected by destroyers entered the harbor; two battleships and a destroyer flotilla waited outside to hold the sea in the event of Austrian naval opposition. Notwithstanding that the Austrian land batteries concentrated their fire upon the only available gangway, the sick and wounded were carried on board the hospital ship under a hail of shells. All movements had to be carried out in full sight of the enemy. The Italian rear-guard surrounding the town had retired before the ever-increasing pressure of the investing armies. The dock was still crowded with refugee Serbian soldiers; the Austrian fire increased in fury and searched every foot of the harbor. At this critical stage 100 Italian sailors landed, crept on all fours along the beach toward a great dump of thousands of sacks of flour. With these they built a breastwork, constructing two effective trenches to enable the retiring troops to reach the gangway. They then returned to their ships. Two Italian cruisers now returned, opened a violent fire on the Austrians and drew their fire in return. Meanwhile, a swiftly-moving procession of stretchers bearing wounded Serbs, Montenegrins and Albanian refugees was passing under cover of the flour-sack trenches. By eight o'clock at night 10,000 individuals had been embarked; no one was left behind. General Ferrero was the last to leave the shore. There yet remained a great accumulation of stores, horses and mules to be destroyed to prevent their falling into enemy hands. This was accomplished by a few shots form the cruiser *Puglia* and as the 12 crowded transports, the hospital ship and the convoy drew out into the darkness, guided by a fast destroyer flashing signals, the burning town of Durazzo appeared like a giant volcano in eruption. Between 12 Dec. 1915 and 22 Feb. 1916 no fewer than 11,650 refugees, invalids and wounded persons were transported from the Albanian Coast to Brindisi, Marseilles, Lipari and Biserta; 130,840 Serbian soldiers were landed in Corfu and 4,100 at Biserta, necessitating the employment of six large Italian liners, two French cruisers, one French and five Italian hospital ships, two Italian ambulance ships and 15 Italian, 15 French and four small British steamers. These vessels made 216 successful voyages from San Giovanni di Medua, Durazzo and Foci della Vujussa to Valona; 87 trips from Valona to Corfu and others to Brindisi, Marseilles and Biserta. During March 1916 altogether 13,068 men and 10,153 horses belonging to the Serbian cavalry were transported from Valona to Corfu, and during the whole period under review nearly 23,000 Austrian prisoners of war were shipped from Valona to Sardinia. Some 22,000 tons of food, fodder, hospital stores and medicines were landed at the three Albanian ports, while to safeguard the execution of this great undertaking there were employed 170 cruisers, destroyers, torpedo-boats and motor-boats, the majority being under the Italian flag. The principal organizer and director of the work was Vice-Admiral Emanuele Cutinelli-Rendina of the Italian navy. Mr. Balfour paid a grateful tribute to "the energy and ability displayed by the Italian fleet" in the transportation of the Serbian army from Albania (House of Commons, 23 Feb. 1916)

Italian, French and British warships patrolled the Adriatic; a former German liner, taken by the Italians, was fitted up as a floating clubhouse where the young officers of the Entente submarines congregated in their few leisure hours.

Owing to the extreme cautiousness of the Austrian fleet, the Italian navy was not permitted to distinguish itself in any great sea fight. Yet its position and that of its Allies was one of continuous peril from submarines and floating mines, calling for eternal vigilance. By day and night frail vessels went nosing through perilous channels between hostile islands into harbors bristling with well-placed batteries and not infrequently crowded with powerful battleships too shy to seek the open sea. The Austrians launched thousands of floating mines, and these had to be removed by minesweepers. But time did not pass without occasional encounters. On 5 Dec. 1915 an Austrian cruiser and some destroyers raided the port of San Giovanni di Medua, sinking two small steamers and a few sailing vessels. On 28 December an Austrian destroyer flotilla set out from Cattaro to bombard Durazzo. The land batteries were shelled and a couple of ships sunk when they were engaged by a combined squadron of Italian, French and British light vessels. Two Austrian destroyers were accounted for; the rest hurried back. During a later bombardment Essad Pasha and 300 of his followers were taken off by an Italian warship. Twice during February, while the Serbian transportation was at its height, Austro-German U-boats laid mines in the Durazzo roadstead; on 19 occasions U-boats attacked the convoys, but without success. The small ambulance ship *Marechiaro* was carrying 120 wounded Serbian soldiers when she struck a mine outside Durazzo. The vessel caught fire and, though its commander and a large number of the crew perished, everyone of the wounded was taken off in safety. The sole survivor of a mined Italian submarine, a sailor named Arturo Vietri, swam for 14 hours off Trieste before he was picked up by a friendly motor-boat in the dark. Italy suffered some early misfortunes at sea; she lost the battleships *Benedetto Brin* (29 Sept. 1915) and the *Leonardo da Vinci* (2 Aug. 1916) by internal explosions; the armored cruisers *Amalfi* and *Giuseppe Garibaldi* were torpedoed in July 1915; three torpedo-boats and two submarines were also sunk by 5 Aug. 1916. After a nine months' mine-laying career in the Adriatic, the German UC-12 was trapped and sunk on 16 March 1916; the Italians subsequently raised the submarine and discovered 14 bodies on board; they were German sailors from Kiel, where the vessel was built. It had been transported in three pieces overland to Pola on the Adriatic, where she arrived in June 1915 and engaged in sowing mines against Italy long before that country declared war on Germany. Five other U-boats fell to Italian guns. The Austrian submarine U-12 (not to be confused with the German one just mentioned), was torpedoed and sunk by an Italian submarine on 11 Aug. 1915. Two days later the U-3, after being rammed by an Italian cruiser, was blown out of the water by a French torpedo-boat.

We left the Italian army at that stage in June 1916 when the back of the Austrian offensive was broken. On 16 June the Italian counter-offensive began, when two columns of Alpini drove the Austrians from a high peak above the Val Sugana. The Italians now began to climb again up that mountain staircase, down which the enemy had half descended. By the 25th they had begun to force the pace of the Austrian withdrawal, pounding their positions between the Brenta and the Adige. They recovered Arsiero on the 27th and in two days the Austrians had lost more than half the ground they had won in six weeks' fighting. As the Austrians retired they contracted their front, thus compensating for the loss of divisions which had been hurried to check the Russians on the borders of Galicia. Thus the Trentino offensive turned to failure for Austria, with a loss of hardly less than 120,000 in casualties and prisoners. Yet though defeated on this front they made another attempt elsewhere — to dislodge the Italians from the edge of the Carso Plateau. Here, on 29 June 1916, the Austrians employed poison gas for the first time on the Italian front, causing a frightful massacre and driving whole regiments, staggering and dying as they went, out of their trenches. Had the Austrians followed up the gas attack with all their infantry they might have gained a great victory. Colonel Gandolfi with a handful of men in gas-masks saved the day. During May Cadorna had swiftly and secretly carried men from the Isonzo to the Trentino front; he now took them back for a greater effort, for it was on the Isonzo that the real Italian counter-blow was to fall. The move came with dramatic swiftness and effect. While the Austrians reckoned on Cadorna to continue his pressure in the Trentino, that commander was laying his plans elsewhere. For the past six months the engineers had supplied a network of roads, gun emplacements and warlike provision of every kind in the Gorizia zone, where the actual task was entrusted to the 3d Army under the Duke of Aosta. It involved not only the capture of an immensely difficult bridgehead under Monte Sabotino, just north of the city, but the overcoming of defenses literally hewn in the rocks.

Gorizia was indeed regarded as impregnable. The artillery preparation opened on 1 August along the whole Isonzo front. On a quiet Sunday morning, 6 Aug. 1916, the region was aroused by a still more tremendous bombardment, heavier than any yet heard on the Italian front. Immediately afterward the Italians surged up through secretly-driven saps in the rock against the Monte Sabotino heights and in one exulting, irresistible rush carried the hill. After defying Italy for 15 months, Sabotino and its defenders were captured almost without loss within a few hours after the bombardment began. The heights of San Michele, just below the town, were stormed at the same time. With these key positions in hand, the Italians had won the necessary bridgehead. This brilliant movement was carried out by the 6th Army corps under General Capello, with whom served, as chief of staff, Col. Pietro Badoglio, who later became the right-hand man of the future commander-in-chief, General Diaz. On Sunday evening and for several days afterward thousands of Austrian prisoners poured down the roads, passing the up-coming Italian regiments. At dusk the Abruzzi brigade stormed

the strong Oslavia line; a brigade of the 11th division advanced against the key-position of Podgora, which was taken with desperate fighting. For two days small garrisons resisted on the summit, particularly an Austrian major, who with 40 men made such a gallant stand that when they were eventually overborne, the

Italian commander ordered his men to present arms to the prisoners. By 8 August all the heights on the western bank of the river Isonzo were in Italian hands, and the time was ripe for the final drive on Gorizia itself. Its speedy fall was now inevitable; the Austrians evacuated the town in haste and the victorious Italians entered it on the 9th. The enemy had suffered 80,000 casualties and lost 12,000 in prisoners. The retreating Austrians were pursued across the highlands of the Carso, across the tributary river Vallone; Doberdo, Oppacchiasella and smaller places in the hinterland were occupied by the Italians.

The Italian offensive now entered on its second phase, with Trieste as the direct objective. As a preliminary, the enemy would have to be driven beyond the Vallone depression, since from that position he menaced Gorizia and barred progress on the Carso. The Doberdo Plateau was cleared by the Italians on the 10th and the Austrians were thrown eastward across the valley. They held their ground near Monfalcone for two days longer, when their resistance was broken and the whole of the western butt-end of the Carso was in Italian hands. By 15 August the whole Isonzo defense system had disappeared; between Trieste and the Italians there still lay a difficult country, though without any elaborate fortifications such as the Isonzo line had boasted. Yet the Carso was in truth the most terrible battleground in Europe; waterless and dusty, scorching hot by day and icy by night, it was a natural defensive barrier for the Austrians. To make any impression on the rocky floor of the Carso pneumatic drills and dynamite were essential. The Austrian first line had been blasted and drilled out of the limestone rock with machinery similar to that used in making the Saint Gothard and Simplon tunnels. The snipers' covers were armored with iron plates an inch thick cemented into the rock.

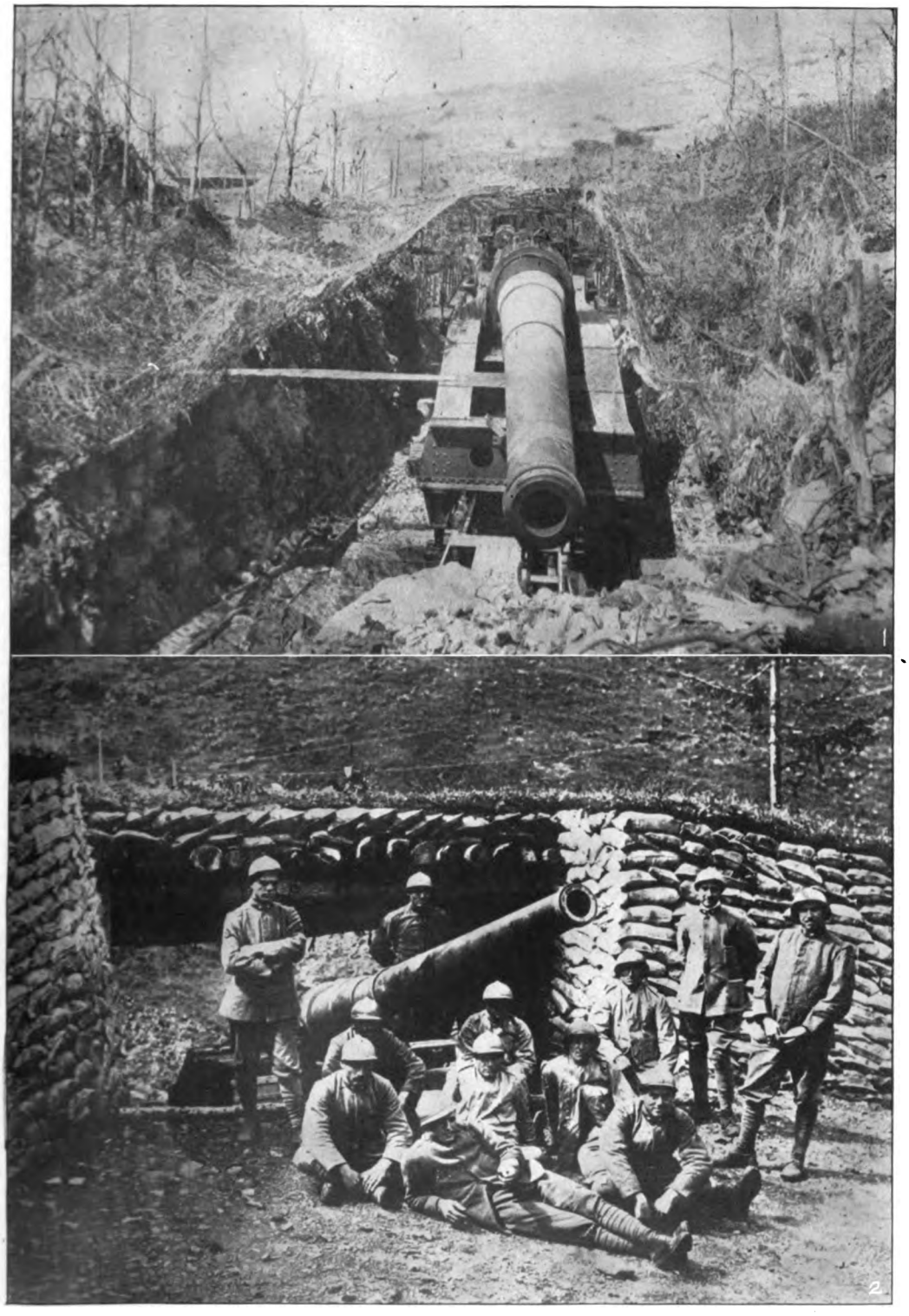
Italy had now been at war 15 months with Austria, but not with Germany. The situation was anomalous, even unique, for Germany was supplying Austria with her most important munitions of war; German officers, soldiers and sailors had been the chief managers of Austria's campaign against Italy so far. The state of "peace" with Germany ended on 27 Aug. 1916, when Italy declared war against that country. On the same day Rumania declared war on Austria. Austria had been indebted to German assistance for such successes as she had won in the field. In the early stages of the war, when she had to depend upon herself, Austria suffered an unbroken series of reverses; after the first fatal step had been taken in 1914, she had the least zest for war among all the Teutonic League, for at the worst she stood to lose much, and at the best to gain little. Her loose internal structure and the variety of races in her empire did not permit any solid national integration. Her alien peoples rose against her and had to be suppressed. Up to January 1916 as many as 3,460 civilians had been executed for treason — 330 in the Trentino, 287 in Trieste, 60 in Fiume, 208 in Istria and Dalmatia, 800 in Bosnia, 720 in Bohemia, 245 in Moravia, 480 in Galicia and 330 in Bukovina. While the Hungarians were entirely on the side of Germany, the German element in Austria was not of one mind, and the army soon lost its admiration for its highly efficient ally. The Emperor Francis Joseph died on 21 Nov. 1916 in his 86th year — the oldest sovereign in the world. He had been defeated in every war he had engaged in, and he died in the shadow of defeat. He was succeeded by his great-nephew, the archduke Charles, a nephew of the murdered archduke Francis Ferdinand.

By 15 Aug. 1916 the Italian advance had reached its limit for the year. With brief pauses between the efforts General Cadorna pressed his advance in great successive blows. Success was more substantial and more rapid in the northern half of the Carso front; in the more difficult southern end, the Austrians held a specially strong position at Hermada from which their artillery dominated the country far to the west. In a big rush on 14 September the Italians took the important town of San Grado on the river Vippacco, an affluent of the Isonzo. On 10 October came a twofold thrust, breaking the Austrian line just southeast of Gorizia between Sober and Vertoiba; while south of the Vippacco a further bend was forced in the enemy front. A fresh double blow fell on 1 November, when the Italians cleared the heights east of Gorizia, whence the enemies had been shelling their lost city, while in the middle of

the front, from the Vippacco to the main road east and west through Oppacchiasella a two-mile advance was made. Over 8,000 prisoners were taken in two days. The Austrians everywhere were now back on their third line; the section just mentioned consisted of recently improvised defenses; their greatest strength lay around the heavily fortified position at Hermada, where formidable batteries were concealed. To capture this sector meant a great concentration of guns and other preparations. Winter set in meanwhile; rain fell in torrents during November and December, and by Christmas the weather was so unfavorable that Cadorna was obliged to postpone his next effort till the following spring. Frost and snow soon made the Isonzo front as arctic a region as the glacier posts in Trentino or the icy peaks of the Dolomites. Throughout the bitter winter a perpetual toil proceeded behind both fronts to improve positions, create gun emplacements and communication trenches and generally adopt all the safeguards that foresight could devise to ensure success. Italy now had Germany openly against her as well as Austria, and the spring was certain to bring some important developments from the other side.

The political situation in Italy deserves a passing notice. On 10 June 1916 the Salandra ministry was defeated, having lost touch with the nation, and was succeeded by a cabinet formed on national lines by the veteran statesman, Signor Boselli (q.v.), who retained Baron Sonnino in the foreign office. The new ministry was strengthened by the accession of Signor Bissolati, the Socialist reformist leader, who was the head of an advanced section clamoring for a more vigorous prosecution of the war and especially demanding war with Germany, which followed, as already stated, two months later. During the autumn and early winter the extreme Socialists endeavored to bring about peace negotiations, for which German agents were assiduously working. They were strongly opposed by Signor Bissolati, who declared in the Chamber (13 Oct. 1916) that any state harboring thoughts of peace at that time would be guilty of an act of treason. "The germ of war," he said, "can only be killed by destroying Austria as a state, and by depriving Germany of every illusion of predominance." Almost alone among the Allies, Italy had an avowed anti-war and pro-German party to deal with. A motion in favor of immediate peace engineered by a Jew of German extraction in the Chamber at the end of November was defeated by a majority of 293 to 47 votes, on which occasion the premier declared, "We seek not the peace of a day, but the peace of new centuries."

During the first quarter of 1917 little occurred on the Austro-Italian front beyond occasional raids and counter-raids, though intense activity prevailed behind the lines. The Austrians had constructed some 2,000 miles of military roads since the previous summer between the Adige and Cadore. There was every indication that the Central Powers were meditating an offensive as soon as weather permitted, and it was the Allies' policy that Italy should strike first. Though as yet no unity of command existed among the Allies, there was considerable more unity in the higher staff work than was generally supposed. General Robertson of the British army and General Foch's chief of staff, General Weygand, visited the Italian commander in March to discuss plans. Italy had meanwhile raised and trained new regiments, increased her guns and output of munitions and greatly strengthened her aerial arm. An Austro-German offensive was daily expected during March and April; it was thought that another attempt would be made to put Italy out of the war altogether by a renewed drive through the Trentino. Between December and March the Italians had carried out extensive defense works in the Trentino, despite a severe winter in the high mountains. But the expected attack was not, as we shall see, launched till the autumn. The Italian plan was to engage the enemy on the whole Isonzo line from Tolmino to the sea by an intense artillery engagement in order to keep him in doubt as to where the infantry were to be employed. By simultaneously showing vigorous activity in the Trentino the enemy would be held off in that quarter. Cadorna's intention was to strike hard with his left on the Isonzo against the heights from Santo to the north of Plava, and then, when the enemy had concentrated his reserves there, to deliver his main attack on the southern Carso toward Hermada. Artillery preparation began on 12 May, assisted by heavy British guns; by the morning of the 14th it had grown to immense fury; demonstrations were made at different points on a front of nearly 20 miles. The Austrian first-line trenches were blown out of existence by the cannonade; infantry raids met little opposition from the dazed and shattered Austrians. French batteries had also arrived in the zone of Gorizia and the middle Isonzo; had the unity of front been complete at that time, there might also have been some French and British divisions on the spot to take part in the drive on Bainsizza and thus have prevented the disaster that was to follow. But the German divisions came instead, while practically the whole of Austria's effective strength, some 960 battalions, were facing the Italians. Some 6,000 guns, mainly heavy and medium calibre, held a superiority of 25 per cent over the Italian artillery effectives. Already in June 1915 the Italians had forced their way across the Isonzo and secured a precarious bridgehead at Plava. For two years they had held this position and extended it to include the hamlet of Zagora, a mile down the stream, on the lower slopes of Monte Kuk. It was this position which became the base for the offensive of May 1917. There had been uninterrupted fighting in this sector, but neither side could dislodge the other. Here the Austrian trenches were only a few yards above those of the Italians on the precipitous sides of Kuk; there was only room for one set of barbed-wire entanglements to serve as a defense for both sides. This remarkably close proximity existed for nearly two years. Another weakness of the bridgehead position was the fact that only one narrow road ran down from Verhovlje Pass to Plava bottom, and it was overlooked at a distance of less than a mile by the Austrian artillery on Monte Kuk. Everything that could not be carried down to Plava by mules through the forest tracks had to be transported in full sight of the enemy down the exposed road. A second roadway had been constructed and was opened a few days before the offensive began in May 1917. The term



1 Camouflaged Italian marine gun
Copyright, International Film Service

2 An Italian gun crew at rest during a lull in the fighting
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1 Shell-swept forest on the peak of Mount Grappa

2 Italians moving camouflaged gun to the front

"bridgehead" implies control of that end of the bridge — in this case a permanent one — which is nearest to the enemy.

In the morning of 14 May a pontoon was thrown across the river opposite Zagora, a little farther downstream. The main effort was directed on a five-mile front between Salcano, northwest of Gorizia, and Plava. Infantry advanced by the two bridges and stormed a hill east of Plava and the northern spur of Monte Kuk; Zagomila (an Austrian fortress) fell to one Italian brigade, while a Campobasso regiment struggled up the slopes of Monte Santo. By nightfall the Austrian second line, 800 feet above the stream, held up the attack. Two battalions of Bersaglieri and Alpini surprised the enemy in the dark and forced a passage of the river near Bodrez, between Plava and Tolminò, where they organized a bridgehead and held their ground. The attack was renewed all along the line at dawn; the northern and southern summits of Monte Kuk were captured; on Monte Santo the Italians were obliged to withdraw; the result of the day's fighting gave the Italians the western gate of the Bainsizza Plateau, also Monte Vodice, and a wide range of observation over the enemy's communications for the front on San Gabriele. During the assault on Hill 174 north of Tivoli by the Italians, the Austrian batteries heavily bombarded the city of Gorizia from their hill positions and seriously damaged many of its buildings. On the first two days of the battle the Italians took over 3,000 prisoners, a mountain battery and 30 machine guns. The Austrians launched fierce counterattacks on succeeding days against Kuk, Vodice and the Central Carso position, but failed to dislodge the victors. Fresh Austrian batteries had been rushed from the Russian front and placed in position on the Carso; these were now shifted again to the north of Gorizia. The battle raged fiercely till 22 May, not only on the Isonzo, but in the Adige Valley and between Asiago and the Val Sugana, particularly around the Tooth of Pasubio, a rock tower of the peak which was the key of the Italian line west of Asiago. The small troop of Bersaglieri and Alpini which had crossed the Isonzo at Bodrez was withdrawn on the 18th. Their little bridge had quickly been shattered and they were left on the enemy's side of the river with hundreds of prisoners and the stream behind them. On 23 May the 3d Italian Army under the Duke of Aosta struck on the Carso: The second act of the drama began. For 10 hours every available gun sprayed a torrent of fire, and in the afternoon the Italian infantry went forward. The enemy lines, cut in the solid rock of the plateau, were broken from Kostanjevitza (or Castagnavizza on the hill road to Trieste) to the sea. Jamiano and its surrounding hills on the road farther south were also taken in the first day's battle, which yielded over 9,000 prisoners. Some 130 military and naval aircraft harassed the Austrians from the rear, while a squadron of British monitors bombarded the Austrian flank along the coast. While the left wing of the Duke of Aosta's force carried out a demonstration from Volkovniak southward, the centre and right led the main attack, storming the Austrian trenches south of the Kostanjevitza-Hudi-Log road, and swept beyond Lukatic. Jamiano, Bagni and a number of low hills west of the mouth of the Timavo were carried by the bayonet. Deceived by the feint beyond Gorizia, the Austrians were completely taken by surprise; despite the most determined counterattacks, they lost both their first and second positions the first day. By 26 May the Italians had reached the foot of Hermada, a natural fortress 1,000 feet high, guarding the road to Trieste. The Austrians put up a brave defense and counterattacked at many points; they managed to recapture a hill east of Gorizia, but lost it a few hours later. One effect of the Italian advance was to free Monfalcone from its daily bombardment by the guns of Hermada, for although that fortress had not been captured, its chief batteries were now diverted in other directions.

During a pause on the Isonzo the 1st Army in the Trentino made a swift attack in the mountains between the Adige and the Brenta. After driving the enemy up the Tonale Pass on 10 June, the Italian infantry carried the Agnello Pass on the frontier line due north of Asiago and captured nearly the whole of Monte Ortigara east of Cimi Undici. On the 16th Italian troops advanced over the glaciers of Adamello, northwest of Lake Garda, and captured a strongly-fortified position 11,000 feet high on Corno Cavento.

An acute political crisis convulsed Rome during this period, centring round the national war aims as they affected Italian claims in the Adriatic and in Albania. Italian troops had in June occupied Yanina, formerly a part of Albania, but at this time included in Greek Epirus. The object of the occupation was to assist the Allies in Macedonia, but the Greek government, still under pro-German predominance, made a strong protest. The various questions were discussed in a 10-days' secret session of the Italian Chamber. The Boselli Cabinet survived that crisis, but its position was precarious; there was a general feeling that it had failed in energy and foresight. Albania was declared by Italy an independent country under her protection, 3 June 1917.

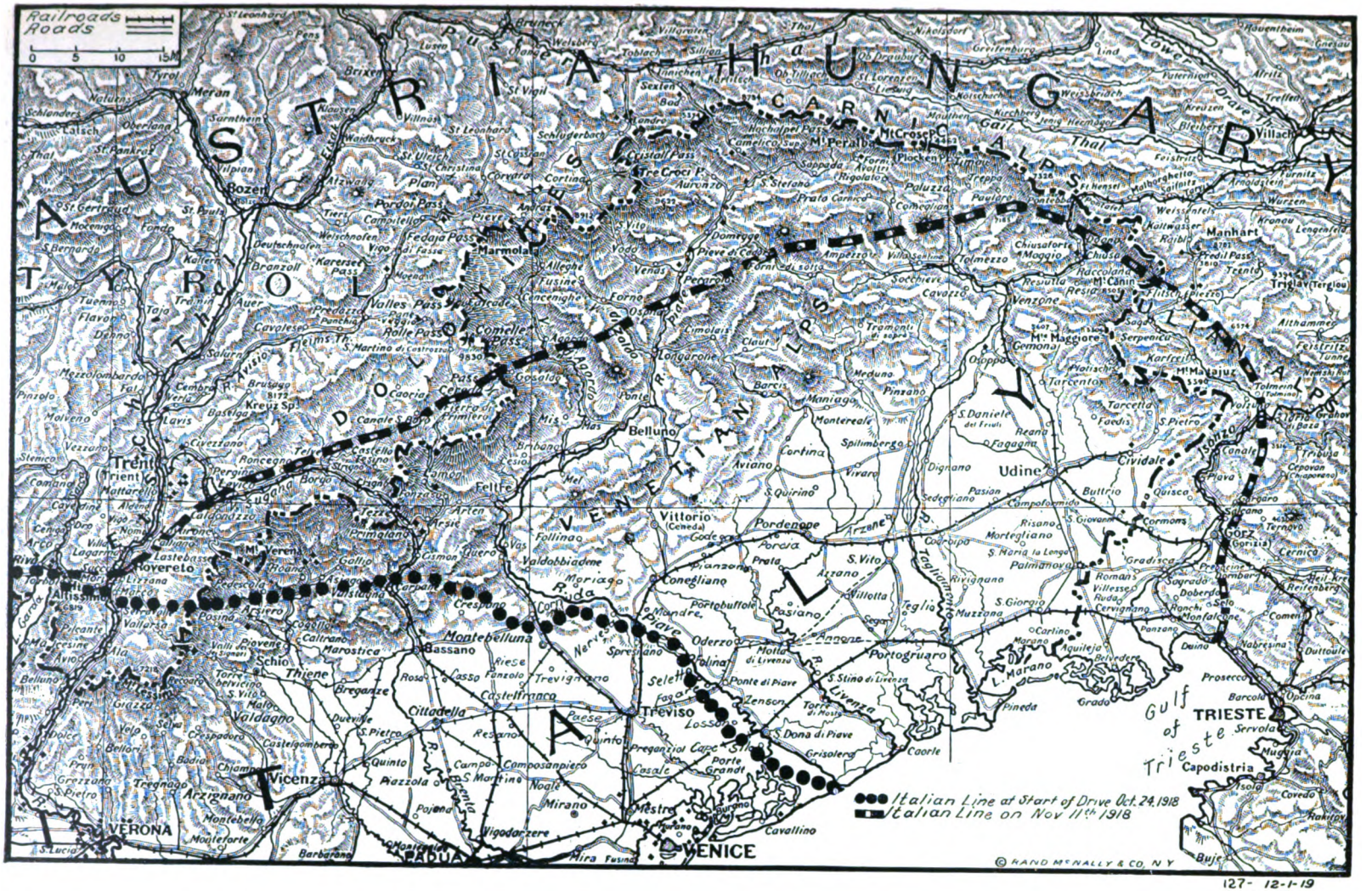
To return to the Isonzo. By the end of May 1917 the Italian offensive had prospered, though scarcely up to the expectations of its promoters. A halt for rest was called on the 30th, when the weather broke and the battle had virtually died away. Prisoners to the number of over 15,000 had been taken, some 20 guns and a large stock of war material. Between Kostanjevitza and the sea the Italian line had been advanced up to two and a half miles on a five-mile front; the Timavo was crossed and some obstructive marshes successfully passed, while a footing had been obtained on the slopes of Hermada. But the heights around Kostanjevitza in the north and Hermada with its tunneled rocks still stood firm: the two pivots of the Austrian line had not been shattered. Uneasiness prevailed among the Austrian High Command at the Italian successes. A council of war was held at Laibach, from which an urgent summons for help was sent to Berlin. Men and guns were sent from the stagnant Russian front, but they arrived too late to influence the result of the battle. However, a great Austrian counterstroke was decided upon. It opened on 1 June with a severe bombardment of the ridge of Fajti Hrib and infantry attacks at Tivoli and the southern crest of Vodice. The fire grew in intensity and on

4 June the Austrians made an attempt to storm Fajti Hrib with picked troops that won a footing inside the Italian positions. The Italians charged, recovered the ground and annihilated the storming party. The enemy was checked, but the Italian new line was badly placed, and a few days later (5 June) the outposts were driven in and the right wing was forced back from the slopes of Hermada. A lull fell on the scene; the counterstrokes had cost the Austro-Germans 24,000 prisoners and nearly 80,000 killed and wounded. The Italians now stood at the gates of Trieste — the edge of Hermada in the south and of the Bainsizza Plateau in the north, the key to San Gabriele and San Daniele in the Ternovanerwald. During the last days of August and the first week in September the Italian position on the Bainsizza was highly critical on account of imperfect communications. Fresh enemy battalions and batteries were constantly arriving from disintegrated Russia. If the Austrians had now been able to attack the isolated force on the Bainsizza before it could prepare its trenches, there would have been every chance of success.

Great preparations were in progress on the Italian side for an assault in force on San Gabriele and the Bainsizza position. In that direction and over the Carso lay a possibility of breaking the Austrian resistance. Batteries and troops were requested from the French and Flanders fronts, but there the Allies were already committed to extensive operations and could spare no infantry till those operations had been carried out. On purely military grounds the French and British commands were obliged to refuse the Italian request; the centre of gravity lay on the Western Front, and any defeat that might have been inflicted upon Austria in the field would not have struck any decisive blow at the power of the principal antagonist, Germany; while any weakening of the Western Front by withdrawing troops for operations elsewhere was not unlikely to court disaster. Italy was thus perforce left to her own resources and had to do the best she could with the material at hand. Russia was gradually dropping out of the war and a mighty German effort was to be expected on the Western Front. The Papal Peace Note, which contained the phrase, "useless slaughter," was utilized by the "defeatist" sections to convey the impression among the Italian people that their propaganda was supported by the Holy See. Industrial troubles were spreading in big Italian cities; the government was vacillating and unpopular; the land was full of pacifist talk and an insidious peace campaign was sowing discontent among the troops. A speedy victory in the field was imperative.

The attack opened on 18 Aug. 1917 with a violent artillery preparation along the whole line from Tolmino to the sea — the so-called "Julian front." General Cadorna's intention was to test or "feel" the enemy's front by general attacks to find a weak spot; once that was found, the attack could be pressed hard with the object of seizing one or other of the three key positions — the Austrian bridgehead at Tolmino; Monte San Gabriele; and Hermada, spread over a line of 30 miles. During the night of the 18th the Italians constructed 14 bridges over the Isonzo and began crossing the river from Plava northward to Santa Lucia. Their first rush on the 19th carried the front Austrian trenches the whole length from Plava down to the sea (25 miles). The main attack was delivered in the Carso Plateau heights, where almost half of Austria's fighting strength was concentrated, composed mainly of Ruthenes, Poles, Czechs, Slovenes and Serbo-Croats. Facing this force was the Italian 3d Army under the Duke of Aosta, while General Capello directed the 2d Army against Bainsizza. General Cadorna soon discovered the weak spot in the enemy's defense: it lay on the heights of the Middle Isonzo — the key position of Monte San Gabriele. A furious battle raged for over two weeks round that mountain and on the Bainsizza Plateau. Monte Santo was captured by the Italians on 27 August; two days later the main centre of the battle shifted beyond Santo to the higher peaks of the Bainsizza Plateau; on a front of 12 miles the Italians had advanced about four miles. The Austrians under Gen. Borojevich von Bojna stubbornly contested their progress. San Gabriele fell to the Italians on 4 September; the fierce bombardment had reduced its defenses to a "gruesome slaughter-house." There was less progress on the Carso front, where General Diaz captured the village of Selo; and in the Hermada region the Italians recovered some lost ground. Austrian counterattacks were beaten off and nearly the whole of the ground was held. From the beginning of the offensive the Italians had taken over 30,000 prisoners, while the enemy claimed 6,000. The Italian success had been considerable, but the collapse of Russia had prevented a decisive victory. Both sides settled down exhausted on the ground where they found themselves; from the Italian point of view, the situation appeared to be secure. It will be noted that all the battles on the Julian front were comparatively short ones, the explanation being that on such difficult terrain the human machine cannot long bear the strain demanded.

In the midst of imagined security, when not a few on the Italian side believed that the year's operations were nearly over on their front, there fell, like the proverbial bolt from the blue, that tremendous cataclysm which almost ruined Italy and the Allied cause. It was known that German troops had arrived to reinforce the Austrians, but the enemy's new strength had been underestimated; and besides, there were dark forces at work far behind the battle-line. The Italian Parliament met on 16 Oct. 1917. Commander-in-Chief and Minister of War had assured the country that the Julian front was quite safe. The official Socialist party had welcomed the Papal Peace Note and demanded that "This winter no one must be in the trenches." Scarcity of food and domestic mismanagement were charges laid upon the government's shoulders. The premier was an old man of 80 and other ministers had exhibited little firmness in handling domestic malcontents. The soldiers at the front also had their grievances; general lack of education among the rank and file presented an ideal soil for the sowing of tares by Socialist and Bolshevik propagandists. The specious argument, "What are we fighting for? Let's go home," proved an irresistible fascination for many war-weary but nevertheless patriotic soldiers. Nor is this spirit to be wondered at when the


Railroads
Roads
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Fedaja Pass
Rolle Pass
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Karerset Pass
Brenner Pass
Kreuz Sp.
Toblach
Sexten
Tre Croci P.
Cristall Pass
Mt Peralba
Mt Croce P.
Plocken
Gail Thal
Villach
Manhart
Triglav (Terglou)
Mt Maggiore
Mt Matajur
Tolmein
Caporetto
Udine
Cividale
Gorz (Gorizia)
Belluno
Vittorio (Ceneda)
Pordenone
Conegliano
Montebelluna
Bassano
Schio
Thiene
Valdagno
Vicenza
Arzignano
Cittadella
Castelfranco
Treviso
Oderzo
Portogruaro
Latisana
Grado
Gulf of Trieste
TRIESTE
Capodistria
Monfalcone
Gradisca
Palmanova
Cormons
Caporetto
Tolmein
Flitsch
Tarvis
Pontebba
Paularo
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Comeglians
Ampezzo
Cortina
Auronzo
Longarone
Belluno
Feltre
Primolano
Arsiero
Asiago
Roveredo
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Lago di Garda
Lago di Caldonazzo
Lago di Levico
Lago di Molveno
Lago di Tovel
Lago di Tenno
Lago di Ledro
Lago di Idro
Lago di Santa Croce
Lago di Misurina
Lago di Landro
Lago di Dobbiaco
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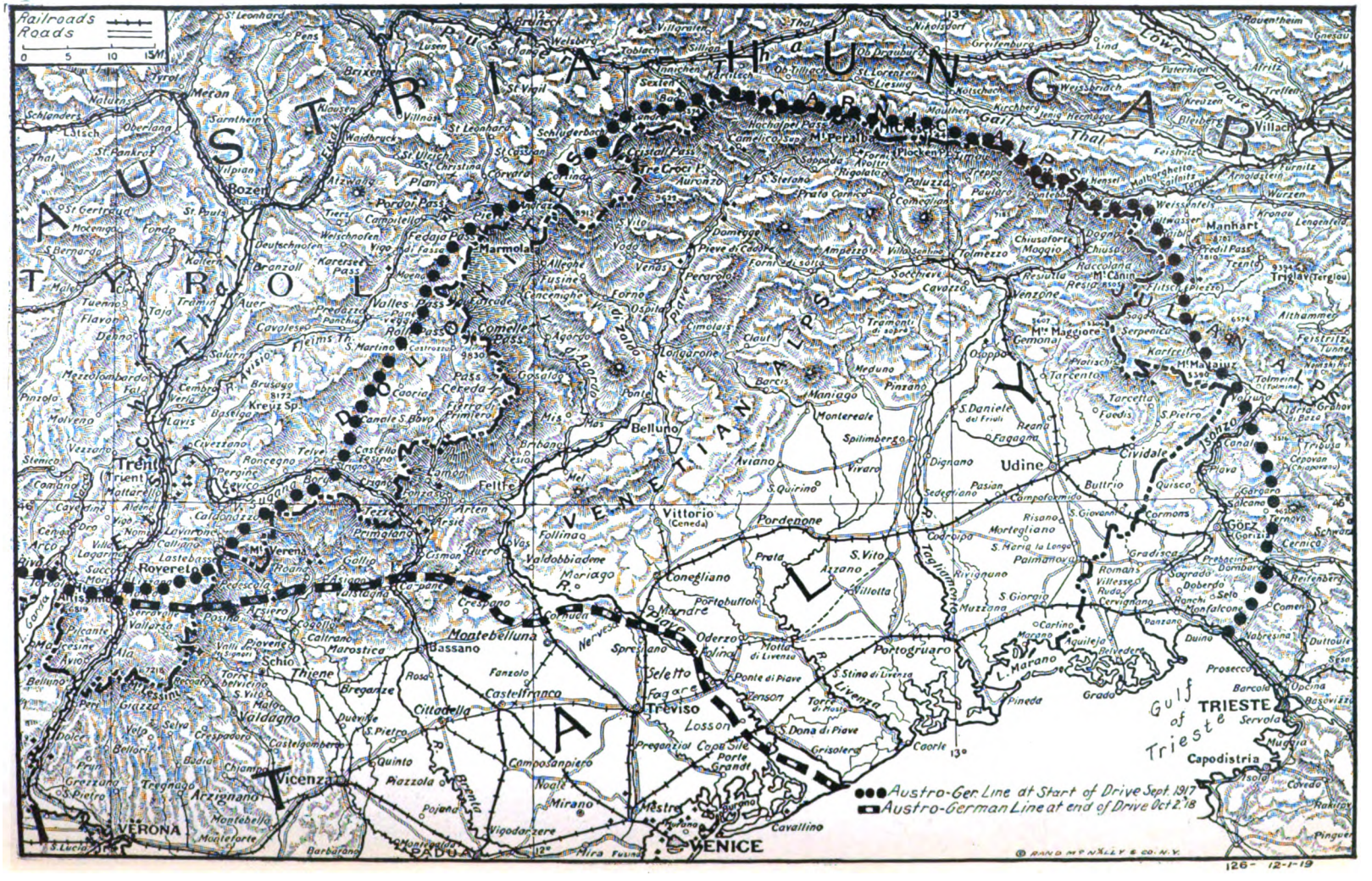
Lago di Garda



ITALIAN OFFENSIVE

severe hardships they suffered are taken into consideration. The Russian army had given the example of throwing away their arms and refusing to fight.

The night of 23-24 October was dark and foggy on the Caporetto, where stood the 2d Italian Army under General Capello, who at the time lay sick with fever. A violent bombardment from the Austrian side broke out during the night; in the storm of shells were some emitting a new kind of poison gas. In the morning of the 24th Cadorna realized what was coming. Before the Alpini guarding the pass leading down from the Caporetto had recovered from the surprise of the fierce but very short bombardment, the German infantry, pouring down the pass at an extraordinary speed, were among them. The Italians were bayonetted in hundreds and the remainder of the troops at this point fled in panic. At Tolmino, farther south, whence the Austrians had never been driven from the west bank of the Isonzo, they broke through the Italian lines at the first rush. The left and right of the line held, but the defenses being ruptured at Tolmino and Caporetto, the whole 16-mile sector from Plezzo to Tolmino collapsed in 24 hours. Here ensued, not a retreat, but a disastrous rout; hundreds of guns and great quantities of stores were abandoned to the enemy. In the afternoon the enemy was across the river attacking the reserve lines; by the evening he was on the slopes west of the Isonzo. The struggle and retreat continued uninterruptedly throughout the 25th and 26th; on the 27th the German commander, von Below, entered the Italian city of Cividale. In Rome the Boselli Cabinet fell on the 25th; the first news of the disaster arrived next day, while Signor Orlando was engaged in forming a new government. In 12 hours the Italians had lost the Bainsizza; it had cost 20 days' hard fighting to capture it. The Austro-German avalanche increased in velocity on the 27th, and the only hope now left for the Italians was a possible stand on the Tagliamento, the Piave, or, as a last resort, the Adige, involving a considerable sacrifice of home territory.

Though the troops to the south, the Italian 3d Army, occupying the Bainsizza, Gorizia and the Carso, made a desperate effort to check the torrent, they were obliged to fall back in accordance with the retirement in the north. Gorizia was evacuated on 28 October and occupied by the Austrians. By that day the enemy claimed to have taken 100,000 prisoners and 700 guns. Udine, the seat of the Italian main headquarters, fell to the Austrians on the 29th. Capello's broken army streamed in wild disorder back to the Friulian Plain, uncovering the Duke of Aosta's flank and jamming him between the invaders and the Adriatic. Though temporarily vanquished, the spirit of the nation was not crushed; it rose gallantly to the call of danger; people and leaders faced the crisis with commendable fortitude. The overwhelming magnitude of the disaster led the Italian command to overestimate the forces against them, for it was the new tactics and not weight of numbers that had carried the Austro-Germans farther than their expectations or intentions provided for. But Ludendorff, who had planned the campaign, was not prepared for such a great triumph as now lay almost within his grasp — the annihilation of Italian resistance. All now depended upon the 3d Army, and it did not fail its country in the crisis. Something like a million men, hampered with heavy naval guns, which had to be dragged through swamps and ferried on rafts through floods and blinding rainstorms, were engaged in the retreat; it was a race against time to reach the Tagliamento before the enemy. The enemy pressed close on their heels, and on 5 November Borojevich von Bojna's Austrian army operating on von Below's left forced a passage of the Tagliamento near Pinzano, about 40 miles from the mouth of the river. Cadorna still held the middle and lower river, but the position was too precarious in which to remain. The Adige, 60 miles to the west, promised the best defense, but that would uncover Venice, the key to the Adriatic and the whole of Italy's defense. By 8 November the enemy had taken 2,300 guns and nearly a quarter of a million prisoners. Large bodies of Italian troops surrendered every day. The pursuit continued and an attack was made concurrently upon the Tyrolean front, the Asiago sector falling to the Austrians on 10 November. By this time the main Italian forces were everywhere back on the Piave; thanks to the wintry weather setting in they were able to hold this ground.

The first news of Caporetto brought the Allies of Italy to her side, but assistance did not arrive until the Italians had borne the brunt of the storm and fought the enemy to a standstill. A French contingent under General Fayolle crossed the frontier before the end of October; a British force under General Plumer came on 10 November. Early in that month Mr. Lloyd George, three high British officers, the French Premier, M. Painlevé and General Foch arrived in Italy. They met the Italian Premier, Orlando, Sonnino, the Foreign Minister, and other officials at the village of Rapallo, 16 miles from Genoa, on 5 November. Out of that meeting there sprang the Allied Council of Versailles and the much-needed unity of command on the Western Front. General Cadorna was transferred to Versailles and General Diaz was placed in command of Italy's armies. General Badoglio became chief of the general staff. During the next six weeks the Austrians delivered numerous attacks along the Piave and near Asiago, where Hoetzendorf was in command, but at the end of the year the Italians were still holding the line of the Piave. On 10 Dec. 1917 it was announced that French and British troops were in the firing line on the Italian front. The British were stationed at Montello, a critical point in the new defense system. Fighting continued throughout the winter; in January the Italians scored some local successes, and by the end of that month military experts decided that the Caporetto campaign was over. Italy had saved herself, but her military strength had been shaken to its foundations and she had lost much war material. On the enemy side, the unexpected success had raised fresh hopes and particularly confidence in the new style of tactics. Yet the disaster was not altogether without profit to the Allies; it brought about that unity of purpose and effort which had hitherto been lacking, and it also united the Italian nation and produced both military and civil reforms.

On the last day of the year 1917 the French

army and artillery came into action west of the Piave, with the result that the Austrians had to abandon their large bridgehead at Zenson, northeast of Venice. The winter was severe and fighting was confined to artillery duels for several weeks. On 29–30 Jan. 1918 the Italians recaptured the Val Bella and Rosso Heights and made 2,600 Austrian prisoners. On 9 May another important success was gained by the capture of the fortified Monte Carno Peak, north of Pasubio. By this time it was evident to the Allied Command that a great Austrian offensive was planned on the Italian front to synchronize with a German attack in France. The next battle opened on 15 June, on the whole front, from the Asiago Plateau opposite the British, around by Grappa, Montello and the Piave down to the sea. After a terrific bombardment the Austrians carried with little resistance almost the whole front line of the Allies, which included three British and three French divisions. But their success on the mountains was of short duration, for the British drove them out again with great slaughter and pursued them into their own lines, where all resistance ceased. The French and Italians also speedily recovered themselves on the mountain front. The Austrian storming parties were harried with instant counter-attacks at every point. At two places the enemy had crossed the Piave on the first day of the attack; by the third day it was apparent that the offensive was not only a failure, but that the attempt might be converted into a disaster. The Piave had been low when the enemy had crossed; now it rose rapidly and washed away the bridges by which he had come over. The Italians gained the initiative by 21 June; most of the Austrians were driven back across the river with heavy losses; after eight days' fighting those of the enemy who remained on the west bank slipped back in the night; during that time the Entente Allies had taken 16,000 prisoners. The Italians followed the enemy across the river, recovering ground with little trouble. By 1 July the Asiago position had been restored and a week later the Italians had cleared the whole Piave delta and secured the safety of Venice. Besides the French and British, there was also a body of Czecho-Slovaks fighting on the Italian front; the first American contingent arrived there on 31 July. On 14 July the second battle of the Marne had opened and the German command was preoccupied with the last desperate throw. During August a series of raids were carried out against the Austrians, but throughout the violent fighting on the Western Front and the period of the Bulgarian and Turkish collapse, the Italians were kept, as part of the general strategy of the Allies, marking time until Foch was prepared for his great thrust. On 15 Sept. 1918 Austria sent a peace note to all belligerents, including her ally, Germany. Neither the Entente Allies nor the United States treated these overtures seriously, for it was known that the dual monarchy was in dire straits and on the verge of collapse. On 6 October General Diaz offered Lord Cavan, who had succeeded General Plumer when the latter went back to Ypres in March, the command of a mixed Italian-British army for the coming offensive.

There were strong reasons for the comparative inactivity on the Italian front during the early autumn. A number of troops had been loaned to Foch and the Austrians held the superiority in men and guns over the Italians. The Austro-Hungarian state was crumbling, and Diaz wisely stayed his hand until the process of internal decay had become accelerated. On 23 October — the anniversary of Caporetto — all was ready for the last great effort. Diaz now had at his disposal 51 Italian divisions, three British, two French, one Czecho-Slovak and one American regiment. According to the plan of campaign the battle was to begin with a feint by the 4th Army under General Giardino around Monte Grappa, after which the main attack was to be delivered between Montello and the Ponte di Piave to cut the line connecting the Austrians in the mountains with those in the plains. At 5 A.M. on 24 October the Italians opened fire and at 7:15 the infantry advanced. The ruse succeeded, for the Austrians believed the Grappa sector to be the main objective. Meanwhile some British troops had taken possession of the island of Grave di Papadopoli in the middle of the Piave, and on the 26th the Italian artillery began to play on the real objective indicated above. Here immediate success was obtained by the three armies on a 30-mile front — the 12th fought its way up the Piave Gorge and cut the Austrian communications with the Grappa massif; the 8th Army, from Montello, passed over the bridges constructed by the British, and the 10th Army crossed via the Papadopoli Island. By 30 October the Austrian front had been cut in two. From this moment the gradual retirement of the Austrians became a rout; their resistance weakened all along the line. Czech and Polish battalions surrendered wholesale, as also did many Hungarian units; only a few Austro-German bodies maintained their discipline and resistance. By 31 October the enemy was flung back across the Livenza; the Duke of Aosta's 3d Army was over the Piave everywhere down to the sea, while away up north Asiago had been retaken. The Grappa front collapsed on 1 Nov. 1918; on the 2d the British from the Asiago Plateau rested on Austrian soil; the roads to Trent and Trieste lay open. More than 300,000 prisoners and 5,000 guns had fallen to the victors. The Pope appealed to Great Britain (1 November) in behalf of Austria's plea for a separate peace. On 29 October an Austrian flag of truce party had approached the Italians in the Adige Valley, but as it could show no proper credentials it was sent back. Next day another white flag arrived with General von Weber and seven other plenipotentiaries. The terms of an armistice were presented by General Badoglio on 3 November; these were promptly accepted and on Monday, 4 Nov. 1918, hostilities ceased between Austria and Italy. The victory was decisive and overwhelming; Austria collapsed under military and internal pressure just as her ally followed a week later. Of all the Allies' enemies Germany alone remained, and she was preparing to hoist the white flag. At the close of the war it was revealed that Italy had mobilized 5,000,000 men out of a population of 35,000,000; she had lost nearly 470,000 killed and close to 1,000,000 wounded, of whom more than half were crippled for life. Besides fighting her own battles with comparatively little material help from her Allies, Italy sent 250,000 men to the French front, where they held part of the line between

Rheims and Chateau-Thierry. Since early 1917 Italy kept 100,000 men over military age building roads in France. An Italian brigade also co-operated with the British forces in Mesopotamia under General Allenby from the spring of 1917. During the last year of the war Italy had youths of 19 in the fighting line; early in 1918 boys of 18 and 17 had been called up and enrolled for the army and navy. Austro-Germans holding the invaded provinces of Italy after Caporetto damaged 431 industrial plants, causing a loss of over $57,000,000. While the Italian navy had no opportunity to fight any great sea battle, it performed an enormous service to the Allied cause and displayed brilliant examples of individual valor. On 9 June 1917 Commander Luigi Rizzo with two small torpedo boats forced his way by night into the port of Trieste after cutting the big steel hawsers at its entrance, sank the battleship *Wien*, damaged the *Budapest* and got safely away. On 9 June 1918 Rizzo performed an amazing feat of audacity in attacking two Austrian dreadnoughts and three destroyers with two submarine chasers off Premuda, an island bordering the Dalmation Coast. In the gray dawn he slipped through between the destroyers and sank the 20,000 ton dreadnought *Szent Istvan*, badly damaged the other dreadnought and got away again in 20 minutes. The enemy squadron was making for the Italian shore when the unexpected meeting occurred. In the early hours of 14 May 1918 Lieut.-Commander Mario Pellegrini led a raiding party escorted by destroyers into the strongly-fortified Austrian military port of Pola, eluding the observation of the scouts and searchlights. Here lay Austria's fleet of battleships, cruisers and destroyers, fenced off by a chain of mines and a heavy steel net from bank to bank, and encircled by a terrace of land-batteries. After penetrating these obstacles, Pellegrini torpedoed a super-dreadnought, sank his own boat, as arranged beforehand, and with his comrades swam ashore to be taken prisoners. On 1 Nov. 1918 Commander Rossetti and one companion entered Pola with a "naval tank" and sank the Austrian super-dreadnought *Viribus Unitis*, then already in the hands of the Jugo-Slavs, who had seized the Austrian fleet in that harbor a few days previously, and now protested strongly against the battleship being destroyed. That vessel had carried the Archduke Francis Ferdinand to the Dalmatian Coast on the way to his death at Serajevo and had conveyed the bodies of himself and his wife back to Trieste. In all the sea and land engagements the Italian aviators — of whom one of the most daring was D'Annunzio, the soldier-poet — played a conspicuous rôle with a courage excelled by none of the belligerents. The mercantile marine, also, kept the flag of Italy flying over submarine and mine-infested waters, transporting the necessary war material and troops without which victory would have been impossible. The terms of the armistice laid Austria-Hungary open to the Allies for military operations; all the outworks of the Teutonic League had fallen; the central keep of Germany alone remained, and that, too, was destined soon to fall.

In February 1919 the Italian delegates presented before the Reparations Committee of the Peace Conference a statement of Italy's naval losses in the war. These consisted of eight capital ships, eight submarines, and 25 smaller craft. The Italian merchant marine lost 880,000 tons of shipping, or 57.5 per cent of its total tonnage.

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8. COLONIAL AND JAPANESE CAMPAIGNS. Africa.—At the outbreak of war the colonial possessions of Germany in Africa, Asia and the Pacific covered an area of considerably over 1,000,000 square miles, with a total population of about 15,000,000, of whom some 25,000 only were whites and the rest natives or aborigines. The defense forces were composed of roughly 5,000 German and 4,000 regular native troops. In Africa the colonies were German East Africa, German South-West Africa, Togoland and the Cameroons (Kamerun); in Asia, Kiao-chau or Tsing-tau, a protectorate in the Chinese province of Shantung; in the Pacific, the Bismarck Archipelago, Samoa Islands, Kaiser Wilhelm's Land (New Guinea), the Caroline, Marshall, Solomon, Marianne and Pelew Islands. Although these colonies would have become automatically cut off in any case by the British blockade of the North Sea, it was essential to the Entente Allies that they should be occupied as soon as possible because of the assistance they could otherwise render with their wireless stations, coaling depots and other establishments to the German warships — von Spee's China squadron and the commerce raiders outside of European waters. The *Goeben* and *Breslau* were in the Mediterranean; three German light cruisers, the *Bremen*, *Dresden* and *Karlsruhe* were known to be in the Atlantic and a fourth, the *Königsberg*, was stationed off East Africa with her base at Dar-es-Salam, while von Spee with five cruisers had left Kiao-chau before war was declared. A few gunboats, of little fighting value, were stationed on the West Coast of Africa and one in Australasian waters — the *Geier*.

Togoland.— The first Allied blow against German colonies was struck on 8 Aug. 1914, when a British cruiser captured Lome, the capital of Togoland, without firing a shot. The German forces fell back 100 miles inland to Atakpame. French and British territory enveloped the colony — about the size of Ireland — on three sides, and the coastline was open to naval attack. Defense was obviously impossible. Captain Bryant crossed the western frontier with the Gold Coast Regiment and a French force entered the colony from the other side — Dahomey. In two days the whole of Southern Togoland fell to the Allies; on 27 August the government station at Atakpame was taken with very few casualties. The wireless installation was destroyed and the Germans surrendered. A Franco-British administration was set up, and in a few weeks normal peace conditions prevailed again.

Cameroons.— The Cameroons presented greater difficulties owing to the wider area involved and lack of communications. Hemmed in between French Equatorial Africa and Nigeria, the colony was entered from the French Kongo and by British columns from the Nigerian frontier about 25 Aug. 1914. One of the latter, a mounted infantry detachment of the West African Frontier Force under Lieutenant-Colonel Maclear, reached the Benue River and seized a German post. Advancing to the

river station of Garua, they attacked the forts on 29 August, captured one fort, but were driven back next day across the frontier by a violent German counterattack, in which a well-directed machine-gun fire killed several British officers, including Maclear, and accounted for 40 per cent of the native troops. Two other British detachments that crossed the frontier also met with disaster. At the end of August one column occupied the German station of Nsanakong and the other had taken Archibong. Early in September the Germans made a determined attack on the positions and compelled the invaders to retreat. Their ammunition being exhausted, the British garrison fought their way through by bayonet charges and regained Nigerian territory with heavy losses. The complete failure of the land attack is attributable to inadequate preparation, topographical ignorance and the rainy season then in progress. A joint naval and military operation was now begun from the mouth of the Cameroon River. A Franco-British force was convoyed by the cruiser *Cumberland,* the French cruiser *Bruix* and the gunboat *Dwarf.* On 4 September the Germans attempted to wreck the *Dwarf* by an infernal machine; on 16 September the German merchantman *Nachtigall* tried to ram the gunboat, but was herself wrecked with a loss of 36 men. Another attempt, made a few days later with spar torpedoes,* likewise miscarried. The Germans having sunk some steamers to block the passage to the port of Duala, several days were spent by the Allies in clearing wreckage and mines. On the 27th they reached Duala, and a short bombardment resulted in unconditional surrender. The neighboring coast town of Bonaberi also surrendered to Brigadier-General Dobell, and the *Cumberland* took possession of nine merchant ships of the Hamburg-Amerika and Woerman lines, containing general and homeward cargoes and considerable quantities of coal. These vessels, together with the German gunboat *Soden,* were added to the British navy. Meanwhile a French force had arrived by sea from Libreville in the French Kongo. Under cover of a French cruiser they attacked Ukoko on Corisco Bay, sank two armed vessels and completed the conquest of the coast. The Germans retreated inland by rail and along the Wuri Valley, making a stand at Japoma, the terminus, and Jabassi, on the Wuri. Fighting stubbornly, they were pushed back from Japoma by a French column on 8 October and from Jabassi by the British — on a second attempt. From this stage the Germans were reduced to a desultory defensive. Columns of French Colonial infantry under Colonel Mayer and British troops under Dobell moved along the two railroads leading to the interior. Dense forests through which they passed concealed enemy snipers; they reached Edea, 50 miles from Duala, and occupied the town on 26 October, the Germans falling back on Yaunde. They returned later, however, and made a desperate effort to recapture Edea. During November the German capital, Buëa, and its seaport Victoria were taken by the Allies; in December they had gained the whole of the northern line, including Nkongsamba and Baré. Skirmishing continued on the frontiers; a British force crossed from Nigeria and occupied Ossidinge, which surrendered; French columns entered from the Tchad region in the north; French and Belgians intruded from south and east, and gradually a wide circle was formed around the defenders. The campaign developed slowly; swamps, forests and tropical heat impeded operations and the Allies had occasional difficulties with hostile tribes of natives. The siege conditions then prevailing in Europe were here reproduced in miniature. The Germans held on during the whole of 1915; they lost Eseka in May, Ngaundere, Lome and Garua in June, by which time there were nearly 10,000 Allied troops in the colony engaged in rounding up the enemy, whose force consisted of about 4,000, scattered over a country half as large again as the German empire and perfectly adapted for guerrilla warfare. Broad, deep rivers, rocky heights and elephant grass up to 20 feet high, provided ideal defenses and cover. To guard their lines of communications the Allies had to establish blockhouses every 20 miles and garrison them. After the fall of Duala in September 1914 the seat of the German government was transferred to Yaunde, about 120 miles inland. In March 1915 the Allies began a concerted move on Yaunde. Their widely-scattered columns were checked by topographical conditions and frequent digressions necessary to clear adjacent regions. The rainy season intervened and operations were held up until October. Meanwhile, in August, an attempt by General Cunliffe to reduce the German stronghold on the mountain Mora, 1,700 feet high, had failed. The main advance on Yaunde began 9 October. After severe jungle fighting over a wide area the Allied columns closed in on the Germans and entered Yaunde on 1 Jan. 1916. After marching and fighting apart for 17 months those columns converged on their objective within a few days of one another. The bulk of the German troops not already prisoners escaped into Spanish Guinea; the garrison on Mora surrendered on the offer of generous terms 18 Feb. 1916. The conquest of the country was complete; the white prisoners of war were sent to England and the native troops to their homes. A joint Franco-British administration was established.

German South-West Africa.— This great territory of about 322,000 square miles had a population of about 15,000 whites and some 100,000 natives, chiefly Hottentots, Bushmen and Bantus, when the war broke out. Its southern frontier bordered on Cape Colony and the government of the Union of South Africa immediately undertook to defend its borders with its own troops. The declaration of war by Great Britain against Germany revived the smoldering disaffection among a remnant of the Boer irreconcilables and culminated in the Beyers Rebellion (q.v.). About 10 Aug. 1914 the Germans abandoned their two principal stations on the coast, Lüderitz Bay and Swakopmund, and retired to the inland capital, Windhoek, 200 miles from the coast, carrying with them all military stores. By the end of August they had made small incursions into British territory, skirmishing with the farmers over the border. On 8 Sept. 1914 the premier of the Union, General Botha, announced in the Cape Parliament that

* This is a well-known method: a torpedo is fixed on a raft made of spars and towed in the dark to the ship, where it is attached. Naturally this can only be done in the case of the ship being at anchor or in a harbor. The torpedo is fired either by electric wire or an automatic time clock.

the government had decided to carry the war into German territory. A majority in both Houses supported the proposal. Fighting on a small scale developed in the southeastern angle of the frontier; a German blockhouse was captured at Raman's Drift on 15 September, and on the 18th an expedition arrived by sea and raised the British flag over the town hall of Lüderitz Bay. General Botha called for 12,000 troops. In an action fought at Sandfontein, in the desert between Raman's Drift and Warmbad, on 26 September, a detachment of 200 British troops was compelled to surrender after their ammunition had given out. The incident raised considerable suspicion owing to the appearance of treachery that surrounded it. General Botha found reason to suspect the loyalty of Lieut.-Col. S. G. Maritz, then in command of a Union force in the northwest. He had fought with the Boers in the South African War, 1899–1902, and had later assisted the Germans against Morenga in the Herrero campaign. Botha sent Colonel Brits to relieve Maritz of his command. The latter replied with an ultimatum and a threat to invade the Union of South Africa (8 Oct. 1914). Maritz boasted that he had ample guns, rifles, ammunition and money from the Germans and that he would overrun the whole of South Africa. In addition to his own rebel commands he had a force of Germans under him, and held the rank of a German general. He had also signed an agreement with Dr. Seitz, governor of German South-West Africa, guaranteeing the independence of the Union as a republic and ceding Walfish Bay and other portions of the Union to Germany. A widespread conspiracy revealed itself, implicating a number of Boer leaders with a considerable following. Martial law was immediately declared throughout the Union and the government took energetic steps to suppress the rebellion. By the close of the year Botha had taken 7,000 rebel prisoners; their leaders were killed, captured and scattered. On 25 Jan. and 3 Feb. 1915 the last rebel commandos surrendered and the campaign against German South-West Africa was vigorously resumed under the command of General Botha. A feature of the campaign was the attitude of the natives, all tribes uniting with an eager desire to help the Union troops against their former masters. They were not permitted to join in the fighting, but they were employed as scouts and transport drivers.

In January 1915 the British occupied Swakopmund, the terminus of the line to Windhoek and of that running to Grootfontein and Tsumab. They also held Lüderitz Bay, whence another line runs to Windhoek by way of Keetmanshoop and gained control of the Orange River to the south. General Botha's army consisted of about 30,000 men, composed of South African Mounted Rifles, Transvaal Horse Artillery, Durban Light Infantry, Kaffrarian Rifles, Imperial Light Horse, Bechuanaland Rifles, Enslin's Horse, Diamond Field Horse, South African Railway Engineers, South Africa Motor Corps, Queenstown Rifles, Natal Police, Natal Carabiniers, Zululand Mounted Rifles, Pretoria Regiment and some of the Transvaal Scottish. More than half were mounted; many wore no particular uniform, especially the Boer commandos. The principal difficulty before them was that of transport. The theatre of operations was a dreary, waterless desert. All stores and much of the water had to be brought from Cape Town and conveyed into the interior by ox-carts, automobles or by a sea-route of 500 to 700 miles. Inland, even water had to be carried for man and beast, while the temperature was from 100° to 113° in the shade. Large gangs of natives were employed day and night shoveling the drifting sand from the railroad tracks.

Dividing his forces into two main armies, General Botha took command of the northern group and started 22 Feb. 1915 from Swakopmund along the railroad toward Windhoek. Little progress was made during the first month, most of the time being spent in reconnoitring the strength and whereabouts of the enemy. The southern group, under General Smuts, operated in three separate columns, one from Lüderitz Bay on the west, one from the Cape frontier on the south, and the other from Kimberley across the Bechuanaland frontier on the east. The plan of campaign was to conduct an enveloping movement against Windhoek along the two railroads. Owing to the desert nature of the ground the enemy could not hope to maintain a defensive if once dislodged from those lines. Sweeping the scattered German forces before them, the southern columns effected a junction at Keetmanshoop in April and began a united movement northward. Meanwhile Botha, in the north, had fought his way on to Windhoek and occupied the place, which surrendered with 3,000 whites and 12,000 natives. The German forces, however, had retired northward to Otavi, the junction for Tsumab and Grootfontein. Botha reached Otavi by forced marches on 1 July 1915. Here the Germans made their last serious stand. Cut off from further retreat by a flying column under General Brits, the Germans surrendered unconditionally on 9 July 1915 with 204 officers, 3,293 of other ranks, 37 field guns and 22 machine-guns. About 1,500 Germans were already in British hands. By 15 July the rest of the Germans had surrendered and the Union of South Africa undertook the administration of the territory.

German East Africa.—This, the greatest and richest of Germany's colonies, was about twice the size of the German Empire in Europe. It contained a population of 8,000,000, including about 5,500 whites. It was bounded on the north by British East Africa and the Victoria Nyanza; on the west by the Belgian Kongo and Lake Tanganyika; on the southwest again by British territory and Lake Nyasa; on the south by Portuguese Mozambique and on the east by a coastline of 600 miles on the Indian Ocean. The principal seaports were Dar-es-Salam (the capital), Bagamoyo, Saadani, Kilwa, Mikindani, Tanga and Pangani. The two railroads—the strategic Usambara line, from Tanga to New Moshi (220 miles) and the Central, from the capital to Ujiji (780 miles), were completed in 1912 and 1914 respectively, and were intended to be connected with the Cape to Cairo route. A network of good roads spread through the whole territory. The military and police force consisted of about 3,000 natives and 300 Germans, well organized and equipped. At the outbreak of war a number of German reservists were brought from the east and landed at Dar-es-Salam. With these and with recruits taken from residents and native tribes, the German

fighting force in the colony was raised to some 3,000 whites and 5,000 natives. The British strength in the adjacent colonies was almost negligible. The King's African Rifles scattered in British East Africa and Uganda numbered barely 1,000; and in northeast Rhodesia and Nyasaland only small bodies of police and a few white volunteers were available. Particularly vulnerable to hostile attack were the 584 miles of the Uganda Railway, in parts only 50 miles from the German frontier.

Hostilities began on 13 Aug. 1914, when the British cruisers *Astræa* and *Pegasus* made an attack on Dar-es-Salam and landed parties which destroyed the wireless station, the gunboat *Moewe* and the floating dock. At the same time a British steamer on Lake Nyasa captured the German steamer *Von Wissmann* with captain and crew. Some days later the Germans attacked Karongwa, a British port on that lake, bringing 400 men against a garrison of 50, but reinforcements arrived and the Germans were thrown back over the frontier. They next attacked Abercorn on Lake Tanganyika, but were beaten off by a detachment of Rhodesian police. Skirmishing continued along the southern border while the Germans prepared for their main stroke — the invasion of British East Africa. They seized a small frontier post at Taveta and another at Vanga on the coast during the latter part of August. Meanwhile, the British were collecting all available strength to protect the Uganda Railway. White colonists, Arabs, Indians and Somalis were hurriedly recruited and deployed. Reinforcements from India arrived at Nairobi on 3 Sept. 1914 under Brig.-Gen. J. M. Stewart, who took supreme command. He came in the nick of time, for the Germans had set out to wreck the line at Maungu. A force of 600 Germans advanced along the Tsavo River, making for the bridge, but were driven back after a two-days' engagement. On 10 Sept. 1914 the Germans crossed the frontier close to the Victoria Nyanza and occupied the town of Kisi, but they were dislodged on the 12th and retired to Karungu, a British post on the lake. Two British steamers forced them back over the border and sank two German dhows. A German force was moving along the seacoast under cover of the cruiser *Königsberg* to attack Mombasa. A small British force halted them at Gazi for several days until Indian troops arrived on 2 Oct. 1914, and Mombasa was saved.

The German offensive slackened during October; the defenders held the line and awaited the arrival of another expeditionary force from India, which reached the coast on 1 November, under Major-General Aitken. With two gunboats this force anchored off Tanga, the German post, and demanded its surrender. The Germans temporized for a day while strengthening their position and collecting further troops. In the evening some British troops were landed, but their advance was stopped. More men were landed next day (4 November) and a general attack opened. They reached Tanga, but were driven back to their ships under a fierce fire, losing nearly 800 men. Inland, an attempt to recapture a British fort held by the enemy north of Kilimanjaro also failed, though the Germans evacuated the fort on 17 November. A German force broke into Uganda on the 20th and compelled the garrison of Kyaka Fort to retire. Outpost skirmishes continued through December, and in the middle of January 1915 a British garrison at Jassin, 20 miles inside German territory, was compelled to surrender after a desperate defense. The British withdrew from German territory, but Germans still remained on British ground. On 8 Jan. 1915 the British occupied the island of Mafia and on 28 February blockaded the coast. In June an expeditionary force under General Stewart was sent to attack the German base at the port of Bukoba, on the west of Victoria Nyanza. In less than a week the place was destroyed with its boats and wireless installation and the enemy defeated, with most of his artillery and rifles captured. In July the *Königsberg* was destroyed in the Rufiji River, where she had lain for eight months. (See WAR, EUROPEAN — NAVAL OPERATIONS). During the rest of the year indecisive fighting raged on land and the great lakes.

During 1916 nearly the whole of German East Africa was conquered under the command of General Smuts, who succeeded General Smith-Dorrien in February. The German strength was now estimated at 16,000, of whom 2,000 were whites and the others natives. They still held stretches of British territory and had established a large entrenched camp at Taveta along the Uganda Railway and were drawing their supplies from their own rail-head at Moshi. General Smuts decided to recapture this territory before the rainy season. Starting from Mombasa one column advanced along the Uganda Railway, while another column made a flanking operation from Longido, northeast of Kilimanjaro, their objective being Krahe, an important post on the German railway to Moshi. A turning movement by a detached troop under General Van Deventer forced the Germans to evacuate Taveta 9 March. Four days later the British were over the border and had seized Moshi, where the two columns joined forces and pressed the enemy out of the Kilimanjaro region. The war was now carried into the enemy's country. One German station after another fell into British hands until at last Tanga, the terminus on the coast, was captured on 14 Nov. 1916. Dar-es-Salam, which had been strongly fortified and equipped with the naval guns taken from the *Königsberg*, surrendered on 4 Sept. 1916. While General Smuts was sweeping the colony from the north, the Portuguese and Belgians operated from their own territories, south and east. The Belgians captured Ujiji on 3 August. Though the Germans had lost all their important positions their power of resistance was not broken. A strong remnant of their fighting forces was still at large. Throughout the year 1917 they conducted a harassing guerrilla warfare in the south and southeast of the colony. The rounding-up process was extremely difficult for the British, as the Germans had well learned the art of bush-fighting. On 1 Dec. 1917 General Van Deventer reported that the German commander, von Lettow-Vorbeck, had crossed the Rovuma into Portuguese East Africa and that the protectorate, now administered by Great Britain, was clear of the enemy. In the summer of 1918, however, they were still skirmishing in the neighborhood of Lake Nyasa, and not until 25 Nov. 1918, two weeks after the

armistice, did the final remnant of the German forces surrender.

Asia: Kiao-Chau.— This former German colony is a district of about 200 square miles, situated on a sheltered bay in the province of Shantung, China, and surrounded by a neutral zone. The town of Tsing-tau was a naval station and most of its 5,000 German inhabitants were marines. Germany had spent $100,000,000 in fortifying the place by land and sea, and its excellent harbor made it an ideal base for the German Pacific Squadron, which had sailed hence at the outbreak of war. Japan delivered her ultimatum to Germany on 15 Aug. 1914, demanding the evacuation of Kiao-chau. The period of grace expired on 23 August and Japan declared war. On the 27th the Japanese opened the campaign by occupying some of the small islands outside of the harbor and diligently sweeping for mines. On 2 September they landed troops at the northern base of the peninsula to isolate the fortress from the land. The heavy rains interfered with this project, however, and the Japanese began an attack from the air, dropping bombs on the ships left in the harbor and on places of military value. The railway station at the head of the bay was taken by storm 13 September, which brought the Japanese within 20 miles of Tsing-tau. They reached the chief of the outer defenses, Prinz Heinrich Hill, on the 27th and took it on the 28th. This gave the Japanese commander, General Kamio, a gun position from which he could cover the inner defenses. The British commander in North China, General Barnardiston, arrived from Wei-hei-wei with a small British force and landed on the seaward side of the peninsula on 23 September to co-operate with the Japanese, whom they joined on the 28th. The invaders advanced to within five miles from Tsing-tau and drew a cordon across the peninsula. The Japanese squadron in the mouth of the harbor bombarded the forts, which responded with a lavish expenditure of ammunition. Non-combatants were permitted to leave the town on 15 October, when a party of women and children and a number of Chinese were conducted through the Japanese lines. The latter now opened a fierce bombardment and considerably damaged the forts on Kaiser Hill and Iltis Hill; the first land bombardment began on 31 October. On the following day the British warship *Triangle* silenced the forts on Bismarck Hill, and on 2 November the Austrian cruiser *Kaiserin Elizabeth* was sunk in the harbor and the floating dock was blown up by the Germans. The Japanese troops were meanwhile driving the German infantry down the peninsula, and by 6 Nov. 1914 the Allies had reached the edge of the last redoubts. Early next morning preparations were made for a final assault, when white flags were raised on the Observatory tower and the remaining central forts. Representatives of the opposing forces met during the day and at 7:30 P.M. the German admiral in command, Meyer Waldeck, signed the terms of surrender. On 10 November the colony was transferred to the Japanese general and nearly 3,000 prisoners were sent to Japan, while the German commander and his staff were permitted to retain their swords. The Japanese lost 236 killed and 1,282 wounded, and the British 12 killed and 61 wounded. The Japanese also lost a cruiser, a destroyer and three mine-sweepers. German losses have not been announced. The strength of the Japanese and British forces was 22,980 and 1,500 respectively. It was officially stated that Japan would administer the territory of Kiao-clau until the end of the war and then open negotiations with China.

Other German Colonies.— Germany possessed about 100,000 square miles of territory in the Pacific, mostly in New Guinea, where the possessions were officially known as Kaiser Wilhelm's Land, situated in the northern part of the southeastern section of the island, altogether about 70,000 square miles, containing a population of some 500,000, of whom 300 were Germans. A large number of islands around the coast were included, the Bismarck Archipelago, New Pomerania, New Mecklenburg, New Lauenburg, Admiralty Island and New Hanover, with 200,000 natives and 300 Chinese and Germans. The Solomon Islands, to the east, were part German and part British, while north of New Guinea lay the Carolines, the Pelew and the Marianne or Ladrone Islands, bought from Spain in 1899. Samoa, the other German South Sea possession, contained about 500 Europeans, British and Germans chiefly, some 1,500 Chinese and a native population of 15,000. The Australian squadron and the British China squadron patrolled the Pacific hunting for German cruisers. An expeditionary force of about 1,500 men sailed from Wellington, New Zealand, on 15 Aug. 1914, escorted by the battle cruisers *Australia* and *Melbourne* and the French cruiser *Montcalm,* arrived at Apia, Samoa, 28 August and took possession of the German islands without opposition. The German officials were left at their posts. On 11 Sept. 1914 a British force arrived at New Pomerania, where some German troops were concentrated. After a short fight they surrendered; two days later the Solomon Islands were surrendered. Kaiser Wilhelm's Land capitulated and a British garrison was placed ashore. By the end of September the Pacific possessions of Germany had nearly all fallen. In November the Japanese took the Marshall Islands and the other northern group and handed them over to Australia. See WAR, EUROPEAN — NAVAL OPERATIONS.

By the terms of the Treaty of Versailles handed to Germany on 7 May 1919 Germany was deprived of all her colonies. France and Great Britain were instructed to make joint recommendation as to the future of Togoland and Cameroon. Mandates for the rest of the colonies were apportioned as follows: For German East Africa, Great Britain; Southwest Africa, the Union of South Africa (British); Samoan Islands, New Zealand; other Pacific possessions north of the Equator (Marshall, Pelew, Caroline and Ladrone groups), Japan; those south of the Equator were placed in mandatory control of Australia, excepting Samoa (already mentioned) and Naura, which latter was placed under the British Empire.

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9. TURKISH CAMPAIGNS. Mesopotamia and Syria.— Turkish politics underwent a profound change after the disappearance of Abdul Hamid II in 1909. In his relations with Europe that monarch displayed

a suppleness and tact which no statesman of his time ever managed to overcome. The Turks gained their footing by the sword, and by the sword alone could they be made to relinquish an inch of it against their will. Knowing perfectly and to a nicety the aims and rivalries of the western powers, Abdul Hamid played one against the other with consummate skill and kept at bay the urgent and persistent demands of Europe for reforms and the supervision of them. At the commencement of his reign Abdul Hamid utilized England to keep Russia out of Constantinople and to withstand her demands at Berlin. Later on he leaned on the Triple Alliance until it began to crack, and then again he turned to Russia as soon as there were signs of a dual combination between her and France. Still later he used German extortion against British sentiment and Russian diplomacy against German encroachment, and *vice versa* as occasion arose. But for years before his downfall, German infiltration had gradually undermined the uneasy autocracy which he had so laboriously built up; the leading lights of the "Young Turk" party, young in their ideas rather than years, were instantly taken under German patronage as soon as their revolution had been crowned with success. The next sultan, Mohammed V, became a mere figure-head in the hands of Enver Pasha, a personal friend of the kaiser, and what may be literally described as the "bonds" between Turkey and Germany became closer than ever. Germany could not avert the defeat of the Turks in the Balkan War because to appear openly in the conflict would have precipitated a European war, and she was not yet ready for that. The effects of the German penetration now became apparent. The strength of Turkev had been so weakened by that struggle that she could no longer stand alone, hence Germany controlled her army, managed her finances, railroads and even her government. Turkey was an essential wheel in the German machine for the realization of a great plan. We have it on the authority of the Greek minister in Berlin that the kaiser told him, on 4 Aug. 1914, the day Great Britain declared war on Germany, that an alliance had been concluded between Germany, Turkey and Bulgaria. If, thereafter, Turkish officialdom entertained any misgivings about entering the war on the side of the Central Powers, such anxiety was forcibly removed by the demonstration made in the Bosphorus on the arrival there of the *Goeben* and *Breslau*. The German military mission in Constantinople took charge. The sultan, "a quiet, easy-going, gentlemanly old man," as United States Ambassador Morgenthau described him, was entirely under the domination of Enver and Talaat Bey, and those two were pro-German to the core. The training by von der Goltz and Liman von Sanders had turned the Turkish soldier into an incomplete German; that training had brought nothing more than defeat in 1912–13 against the Balkan League, and it is little to be wondered at that many Turkish officers and the more intelligent class of "Old Turks" had little relish for the adventure toward which they were heading. The bombardment of Russian Black Sea towns (30 Oct. 1914) by the two German warships flying the Turkish flag led the Allies to declare war on Turkey 5 Nov. 1914. See TURKEY AND THE WAR; WAR, EUROPEAN — HISTORICAL INTRODUCTION and DIPLOMATIC HISTORY.

At the time of its entry into the war the Turkish Empire had an area of 710,000 square miles and a population of about 30,000,000. As a result of the Balkan Wars (q.v.) Turkish possessions in Europe had been reduced from 65,350 square miles to 10,882 square miles; and the population therein from 6,130,200 to 1,890,100. In Asia Minor Turkey had 193,540 square miles and a population of 9,090,000; in Armenia and Kurdistan, 72,000 square miles, population, 2,500,000; in Mesopotamia, 143,250 square miles, population, 1,400,000; in Syria, 114,530 square miles, population, 2,890,000; in Arabia, 170,300 square miles, population, 1,050,000.

The peace strength of the Turkish army was about 17,000 officers and 250,000 men, which could be raised to something like 800,000 if the necessary equipment could be provided. The soldier's pay was 25 cents a month and their families received an allowance of $1.20 per month. Enver Pasha was made commander-in-chief and the German military mission under Liman von Sanders constituted the general staff. During the mobilization a process of "requisitioning" was resorted to under government auspices, which consisted of officials entering stores and dwellings and seizing anything that captivated their fancy, giving in return some worthless paper "receipts." Much of the stuff thus collected was sold again and restolen by officials. A few of those plundered who had influence enough were fortunate in receiving at least a percentage of the value of their goods; by far the bulk — or its proceeds — went into official pockets, while the government appropriated the remainder. Ostensibly for military purposes, the officers "even carried off women's silk stockings, corsets and baby slippers" (Ambassador Morgenthau). In the 15 divisions of the regular Turkish army raised to war strength there were some 300,000 men of all arms; this number was to be augmented by 10 more divisions. Though orders were later issued to raise the total to 50 divisions, it is doubtful if the Turks ever had more than 500,000 men in the field at any time during the war.

Her geographical position prevented Turkey from being of any direct assistance to Germany, for the interests of the latter lay in Europe. Bulgaria, Greece and Rumania were still at peace, hence there could be no attempt on the part of Turkey to regain possession of Thrace. Consequently, there was no room for an offensive in Europe nor any need of a defensive. Italy being also neutral at the time, a descent upon Tripoli was equally out of the question. But Turkey was in a position to strike a useful blow against Russia in Transcaucasia which would divert troops from the Eastern Front; and against Great Britain in the Sinai Peninsula in an attack on the Suez Canal. This latter move, it was expected, would precipitate the long-fomented uprising of the Egyptians and compel England to keep in Egypt the troops which were there in training — Australians and Indians — and also, perhaps, to send further reinforcements from her slender reserve at home. The attempt, if successful, would cut the short route to India and might

help along the uprising expected in that direction. Thus practically all that Turkey had to fear in the way of an attack was in the Dardanelles, the entrance to which had been strongly fortified by heavy Krupp and Austrian Skoda guns. But already in September 1914 the British government in India knew that Turkish agitators were at work on the northwest frontier preaching a jehad or holy war against the white infidels. Hence neither England nor Russia was taken by surprise when Turkey was swept into the maelstrom of war. The Turkish — or rather German — plan was to strike against the Russians in the Caucasus and cut off access to the oilfields; to send an expedition to Egypt; and to seize Basra near the head of the Persian Gulf, where the works and pipelines of the Anglo-Persian Oil Company — the liquid fuel store of the British navy — were situated. This oil concern, it may be mentioned, was formed in 1909 with the object of working a concession granted in 1901 to a Mr. W. K. D'Arcy for 60 years, with the exclusive rights to work petroleum deposits throughout the Persian Empire except in the provinces of Azerbaijan, Ghilan, Mazendaran, Asdrabad and Khorasan. In 1914, before the war, the British government had contracted with the company for the supply of oil-fuel for the navy. The total share capital amounted to $20,000,000; of this sum the government subscribed $11,000,000, thus controlling the majority of votes in the company.

The element of surprise, from which the Turks and their allies hoped so much, proved a failure, for already on 2 November a British warship attacked Akaba, at the head of the Red Sea, and a combined French and British squadren bombarded the Dardanelles forts, which latter was not only a fruitless proceeding, but also served to put the Turks on their guard. Meanwhile, even before the declaration of war, two other items of preparedness for what they knew was coming had been brought about by Russia and Great Britain. A Russian column had crossed the Turkish frontier from the extreme northwest corner of Persia, and occupied Bayazid, near Mount Ararat, while other columns entered Kurdistan from the east in a movement upon Van. Yet more Russian troops were crossing the frontier from Erivan; they took the town of Kara Kilisse, but were held up by the Turks from penetrating farther into the country. The British were likewise ready in the Persian Gulf. The government of India had sent a force to Bahrein Island in the gulf under Brigadier-General Delamain, and on 7 Nov. 1914 this force, composed of British and Indian troops, arrived at Fao, where a Turkish fort defended the entrance of the Shatt-el-Arab, the estuary which unites the Tigris and Euphrates. Between those two rivers lies the land called Mesopotamia. Already in September the Turks had dispatched troops southward from Bagdad to prevent a hostile landing on the gulf; by a forced march these had reached Basra about the same day that the British were disembarking men at Saniyeh, on the Turkish bank of the estuary, the other (eastern) bank being Persian territory. Here the British prepared an entrenched camp and waited for the rest of the force to arrive. A skirmish with the Turks from Basra occurred on 11 November; on the 13th General Barrett came up with the remainder of the Indian contingent. The main Turkish army was reported on the 17th to be advancing in force from Basra, when General Barrett decided to attack at once, a particular incentive being the fact that there were Europeans in Basra whose lives might depend on the timely arrival of the British. Accordingly, the whole force moved out and reached Sahain, which was found to be deserted. British gunboats accompanied the expedition, steaming slowly up the Shatt-el-Arab on the right of the marching troops. After passing Mohammerah, where the Karun also empties itself into the estuary, though from the opposite side, the Turkish army was found posted at Sahil, nine miles from Sahain, with its left resting on the estuary and its right, where the artillery was concentrated, hidden in groves of date palms. Muddy open ground lay between the opposing forces. The weight of the British attack was thrown against the Turkish left, where the gunboats were able to assist by enfilading the enemy's trenches; the right was to be held while the left was turned away from the river and incidentally from the Basra route. The British troops had to advance in the open before a heavy fire which was badly directed and caused little harm. Before the attackers could reach the front line the Turks broke and fled, with the British in close pursuit. The British casualties were only 38 killed and some 350 wounded, while the Turks in their retreat lost over 1,000 men. The road to Basra now lay open. Part of the British force was placed on two river steamers headed for Basra, with gunboats steaming ahead. The rest of the troops were sent after the flying Turks so far as the difficult ground permitted. Below Basra the Turks had sunk three steamers in the fairway to prevent the passage of the oncoming British. A Turkish battery posted to cover the barrier was quickly silenced and the obstructions speedily blown out of the water. The expedition, both on land and water, pushed rapidly ahead and entered Basra, which the Turks had evacuated, on 22 Nov. 1914. The desert column entered shortly after. The Turkish customs-house had been set on fire, the only building in the place which would have been capable of holding the military stores. So far, however, as lack of materials permitted, a base camp was prepared and set in order. On 3 December an Anglo-Indian detachment was sent to Kurna, where part of the retreating Turks had established themselves. Three gunboats, two armed launches and an armed yacht conveyed the troops, who were put ashore four miles below Kurna, on the western bank of the Tigris, while the gunboats went ahead to reconnoitre. They found the enemy strongly posted with batteries covering the navigable channel, some 50 miles above Basra. The gunboats shelled Kurna and the troops advanced under heavy fire. Colonel Frazer, who commanded, finally led his men back to the camp four miles away and sent a message to Basra for reinforcements, reporting the enemy too strongly situated. General Fry arrived with more troops and on 7 December the British captured Mezera, on the opposite bank, and drove the Turks across to Kurna. Next day a rear attack on Kurna was decided on. By a circuitous route the British had reached north of the city and prepared to attack. The same night, however, before the

battle had even begun, the Turks asked for terms. Unconditional surrender was demanded, and the next day (9 November) the Turkish garrison laid down its arms. The British took 1,500 men and nine guns. The advance to this stage had covered 120 miles from the gulf; Kurna and Mezera, respectively on the western and eastern banks of the Tigris, were converted into entrenched camps. A wide region had now to be protected and General Barrett had perforce to mark time until further reinforcements — then on the way — should arrive from India. The first Turco-German project had failed.

In the neighborhood of Mount Ararat the frontiers of Russia, Turkey and Persia meet. Here the limits of Persia form a salient stretching into Transcaucasia, a corner which had frequently been the scene of Russo-Turkish conflicts. The subsidiary Russian operations in this region during November 1914, already referred to, died away toward the early part of January 1915. Meanwhile, a greater struggle had developed in Transcaucasia and on the Armenian frontier. Three reinforced Turkish army corps had been concentrated at Erzerum during October 1914 under the command of Hassan Izzet Pasha. On the outbreak of hostilities Enver Pasha, accompanied by a German staff, took charge of the operations. He had altogether about 150,000 men; opposed to these was a Russian army under General Vorontzov composed of about 100,000 men. A weird conglomeration of races, creeds and languages exists in Caucasia, where some 70 dialects are current and where Turk and Russ had been at grips for centuries; indeed it is doubtful if that region ever enjoyed any long spell of peace since Noah's ark settled on Ararat. To reach the theatre of war the Russians had to traverse difficult mountains, passes and river beds. The movement now to be described was — to Russia — rather a secondary operation; prudence advised a defensive until the severe winter was over. This, however, was not the plan of Enver Pasha, who had formulated an ambitious and skilful campaign to be carried out at once. The great fortresses of Kars and Erzerum, situated about 50 miles on each side of the frontier and consequently 100 miles apart, were the concentration bases respectively of Russia and Turkey in Asia. Enver Pasha's plan was to entice the Russians over the boundary from Sarikamish and to hold them while his left centre executed a wide enveloping movement against Sarikamish, and his left made a circuit to attack Kars in the rear, a form of strategy based on German principles copied from Napoleon. The success of such a movement, however, depended entirely upon an accurate timetable, according to which the participating bodies of troops could arrive at their specified objectives at the correct moment. Considering that the Turks would have to perform their evolutions across such obstacles as snow-clad mountains, through passes and over rivers, the chances of the scheme working satisfactorily were remote. The Russians fulfilled the first part of the Turco-German expectations during the first half of November 1914 by crossing the frontier from the neighborhood of Sarikamish and occupying Koprikeui on the 20th. They were thus well on the road to Erzerum. The 11th Turkish corps was detached to do the "holding" part; the 10th corps was sent from north of Koprikeui to cut the road between Sarikamish and Kars; the 9th corps was to swing round between the 10th and 11th; while the 1st corps, which had been landed at Trebizond on the Black Sea, was to strike at Ardahan and move on Kars via Alexandropol.

So far things looked promising and the Turks attacked on 14 Dec. 1914. Koprikeui was cleared of the Russians, who were driven back some 10 miles to Khorasan; the 9th and 10th corps had struggled through severe weather and reached the road between Sarikamish and Kars by Christmas Day; the 1st corps had struck inland up the Choruk Valley across a pass 8,000 feet high during a blizzard and now looked down upon Ardahan. But the hardships endured by the three traveling corps had worn the men out, and when they arrived at their appointed destinations they were half starved and short of guns and ammunition. General Vorontzov fell upon the 10th corps (28 December) and defeated it in a fierce four days' battle; he next turned upon the now isolated 9th corps and almost annihilated it; the Turkish general, Iskan Pasha, surrendered with his staff (including German officers) after a gallant resistance. Duly, according to schedule, the 1st corps entered Ardahan on 1 Jan. 1915 exhausted. Two days later they were driven out again back to the Choruk Valley, in which direction the remnants of the flying 10th corps were also speeding. Meanwhile the 11th corps drove the Russians back from Khorasan and Vorontzov was obliged to recall his troops pursuing the 10th corps and throw them into battle against the 11th. This latter was also crushed after a three days' fight in deep snow, and by 17 Jan. 1915 it was retreating to Erzerum. The Russian right cleared the Choruk Valley; Turkish transports escorted by warships attempting to land troops and provisions at Trebizond were sunk by a Russian Black Sea squadron and the warships, *Breslau* and *Hamidieh*, were chased back to the Bosporus. Thus ended the Turkish project in failure after three weeks of heroic struggle amid high mountains and deep snowdrifts, with a loss estimated at over 60,000 men. For a time, at least, Russia was secure from attack in the Caucasus.

The third item in the Turkish program fared no better than the two preceding. A successful attack on Egypt could only be carried out by one of two means — by sea or across the Sinai Peninsula. The requisite command of the sea being absent, the only alternative was the land approach. Yet here certain difficulties stood in the way: to reach the canal involved crossing a waterless desert of some 100 miles. Three routes were possible, namely, along the coast from Syria, 120 miles, without water; the southern road, from the head of the Gulf of Akabah, at the head of the Red Sea, 150 miles, equally without water; and through the centre of the peninsula, where there was no road at all. Another serious problem would present itself if and when any one of the three routes had been successfully negotiated by an army. The Suez Canal, which would have to be crossed before a direct attack could be made on Egypt, possessed a virtue not usually associated with

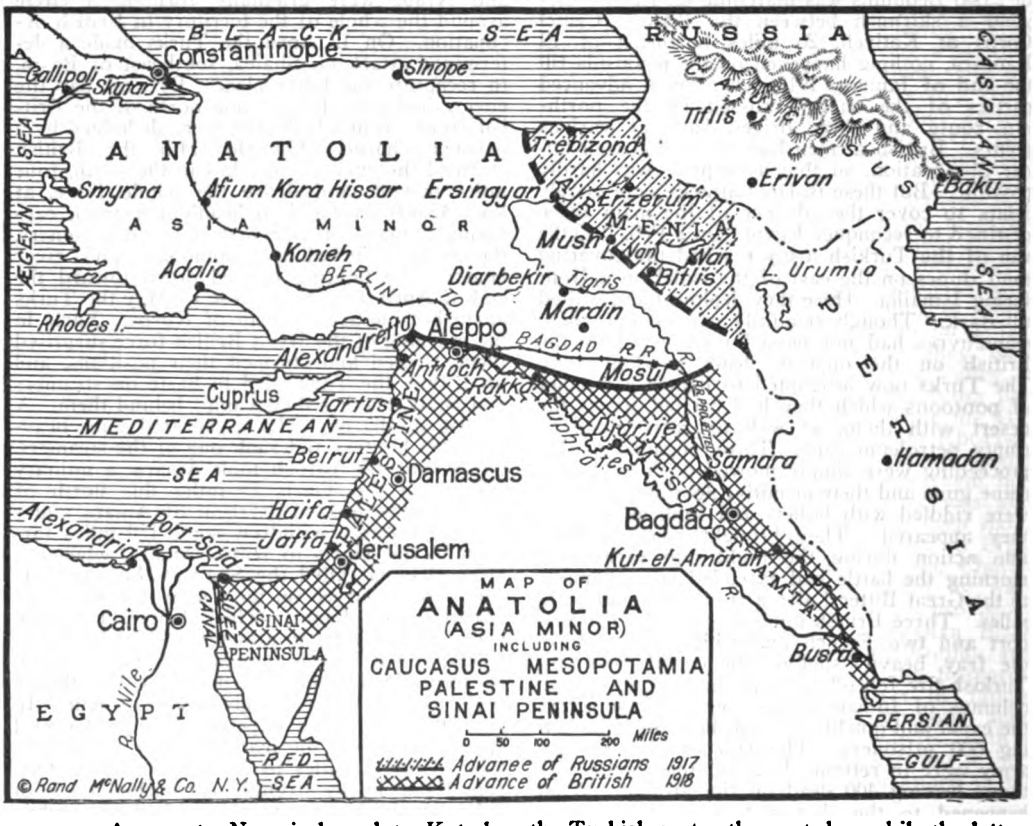
canals — it could accommodate the greatest battleships armed with the heaviest guns. The hope of a general uprising among the natives, however, seemed to outweigh this obstacle in the Turco-German view, and an attack on the canal was duly decided upon and prepared for. Politically the Sinai Peninsula is part of Egypt and has an eastern frontier line drawn almost straight from Rafa near the Mediterranean in a southeasterly direction down to the Gulf of Akabah, leading to the Red Sea. On the northern coast, some 30 miles west of Rafa, an Anglo-Egyptian post was established in normal times, the garrison of which was withdrawn in October 1914, when it was reported that a band of 2,000 Bedouins was marching on Egypt. Beyond a skirmish between the Bikanir Camel Corps at Katiyeh, 26 miles northeast of El Kantara, nothing happened on the peninsula till the end of January 1915, when small advanced parties of the enemy crossed by the northern route and were driven back at various points. British airmen had the region well under observation, so that a surprise was hardly possible. But these isolated attacks were merely feints to cover the advance of the main force destined to reconquer Egypt. On 2 Feb. 1915 the van of the Turkish army reached the covering sand dunes on the east of the canal on a front facing Ismailia. Here they deployed and waited till dark. Though stealthily carried out, these manœuvres had not passed unobserved by the British on the opposite bank at Toussoum. The Turks now attempted to launch a number of pontoons which they had carried across the desert with them, as well as rafts made of empty petroleum cans. Those engaged in this proceeding were simply mowed down with machine guns and their primitive floating apparatus were riddled with bullets and sunk as soon as they appeared. They brought some artillery into action during the night and early next morning the battle had extended from Ismailia to the Great Bitter Lake, a front of, roughly, 12 miles. Three British gunboats, an armed transport and two French guardships took part in the fray, heavily shelling the enemy positions. Turkish fire fell off early in the afternoon; two columns of Indian troops were thrown across the canal and quickly cleared the sand hills, taking 600 prisoners. The rest of the Turkish army were in retreat, dragging their guns with them, leaving 400 dead on the ground. What happened to the shattered host of originally 12,000 men, with a waterless march of 120 miles before them, has not been told. By 8 Feb. they were more than 20 miles away from the canal, and on the 12th a big force of them was annihilated at Tor, near Mount Sinai. A British warship bombarded the fort and government buildings at Akabah and another British vessel took possession of the Turkish fort at Sheik Said, at the southwestern corner of Arabia. The war had begun disastrously for the Turks. They had fought everywhere with their oldtime valor; badly led and worse equipped, they vainly starved and suffered like heroes. No further attempt was made on Egypt during 1915, but in July an unsuccessful effort was made to reach Aden.

The objects of the British campaign in Mesopotamia were to secure the neutrality of the Arabs, to safeguard British interests in the Persian Gulf, to protect the oilfields and generally to maintain British authority in the East. We left the British force established at Kurna, 120 miles from the sea, awaiting reinforcements. These arrived in April 1915 and General Nixon took supreme command. The Turks lay on both sides of Basra, preparing for a new attack. During January 1915 fighting had developed north of Mezera with a force of 5,000 Turks, and early in March an enemy army of 12,000 was located near Ahwaz on the Karun, where a small British garrison was stationed to guard the oil pipe-line. A reconnoitring expedition of 1,000 fell in with the enemy and was compelled to retire with considerable loss. It became apparent that strong forces of Turks and Arabs were gradually forming a circle around the whole of the territory in British occupation. On 12 April the Turks made a determined attack on Shaiba, southeast of Basra, to recapture the latter place. By next day the enemy had gained a position north of the British front, from which they were dislodged by a bayonet charge. On the 14th the British stormed the enemy's trenches to the south, four miles distant, and drove the whole force, at least 15,000 strong, into headlong retreat, capturing a mass of war material and prisoners, the former including automobiles and river boats. The fighting calmed down toward the end of April, but at the close of May the Turks again became active north of Kurna. Early in the morning of the 31st a British force surprised them, shelled and stormed their positions, and on 1 June the Turks fled in haste on steamers and boats, leaving their camps behind them. A British flotilla gave chase, captured some heavily laden lighters and sank one of the steamers. On 3 June the British took Amara, a military station on the Tigris 75 miles due north of Kurna. The ejected garrison of Amara under Nureddin Pasha withdrew some 150 miles farther up the Tigris to Kut-el-Amara, whence a river channel called the Shatt-el-Hai runs due south to Naseriyeh on the Euphrates, 100 miles northwest of Basra. This channel could be used by the Turks to attack the British rear at Basra, and it became imperative for the British to secure Nasariyeh and the river line thence back to Basra before advancing to Kut. In July 1915 a British expedition under General Gorringe crossed the marshes from Kurna due west about 70 miles to Nasariyeh, where they found the Turks strongly entrenched on both sides of the river. Gunboats had meanwhile steamed up the Euphrates from Basra. A combined land and water attack soon dislodged the enemy (25 July 1915), who retreated up the Shatt-el-Hai toward Kut-el-Amara, which now became the next objective on the way to Bagdad. Early in August the British advanced on Kut-el-Amara, an undertaking that began with a victory and ended in disaster.

It must be explained here that the Mesopotamia campaign was carried on under the direction of the government of India. It was that government which had secretly dispatched from Bombay the first Anglo-Indian force to the Persian Gulf early in October 1914 in the event of Turkey throwing in her lot with Germany. The general objects aimed at have been described. In three weeks' operations Basra, the key to Mesopotamia, had fallen to the British at a small cost. In view of this success the Secretary of State for India (in London) gave his

consent for the expedition to push on to Kurna. Though the force had meanwhile been doubled, it had only been provided with less than half its proper scale of medical equipment and the river transport was not sufficient for its requirements. General Nixon, the commander, was instructed (a) to retain complete control of the lower portion of Mesopotamia, comprising the Basra vilayet; (b) so far as possible to secure the safety of the oilfields; and (c) to submit a plan (1) for the effective occupation of the Basra vilayet; (2) for a subsequent advance to Bagdad. After much correspondence between India and England, the Secretary of State (Lord Crewe) sanctioned successively the advance to Amara, to Nasariyeh and to Kut-el-Amara, or Kut, but no farther. The very day after the taking of Basra, 23 Nov. 1914, the Indian government's political agent in Mesopotamia, Sir Percy Cox, forwarded to India, after consultation with General Barrett, a reasoned proposal for such an advance, which was sent on to Lord Crewe in London, who, however, was not prepared to sanction it "for the present." In accordance with his instructions, clause (c), General Nixon submitted a plan for an advance on Bagdad, which was forwarded to Simla (India) on 30 Aug. 1915, but it was not communicated to the viceroy (Lord Hardinge) or the Secretary of State; and the commander-in-chief in India, Gen. Sir Beauchamp Duff, wrote on the plan, "Unless we can get back troops from France, Egypt, or elsewhere, I fear that Bagdad, invaluable as its capture would be, is out of the question."

Meanwhile, General Townshend was leading his division up the Tigris toward Kut. He found the enemy, nearly 10,000 strong, waiting for him on a six-mile front on both banks of the river some seven miles below Kut. General Townshend's expedition consisted of about 11,000 Anglo-Indian troops and a few hundreds of British Territorials from Egypt. The enemy positions were strongly entrenched and the river blocked by booms. Three brigades under Townshend were led by Generals Fry, Hoghton and Delamain. On 27 Sept. 1915 the British made a feint attack on the Turkish right; Fry and Hoghton crossed the left bank of the Tigris over pontoon bridges, the former attacking



the Turkish centre the next day, while the latter with his own and Delamain's brigade made a wide detour around some marshes and fell upon the Turkish flank. In a few hours that flank was crumpled up; fighting was carried on under a scorching sun; the British troops were parched for want of water and fatigued with 30 hours' marching and fighting. The Turks gave way and began to retire upon Bagdad, followed by British cavalry and the river flotilla. A remarkable feature of the battle was the comparative ease with which so strong a position could have been carried with a little over 400 casualties on the attacking side. In two days Townshend held Kut, and the enemy was nearly 100 miles away by the end of the month. On 3 October, when Townshend was pursuing the Turks and had almost reached Azizie, 50 miles north of Kut, General Nixon wired to London, "I consider I am strong enough to

open road to Bagdad, and with this intention I propose to concentrate at Azizie." It seemed the general's idea was that contained in the plan he had sent to India, namely, that he would follow the disorganized Turks into Bagdad. But, owing to unsuitable and insufficient transport facilities, Townshend was unable to overtake and again defeat the Turks before they had time to reorganize in a new position at Ctesiphon. On realizing his inability to continue, he wished to return to Kut, but General Nixon still pressed his proposal on the government and ordered him to concentrate at Azizie. Mr. Austen Chamberlain had meanwhile (27 May) succeeded Lord Crewe at the India Office and had followed the latter's cautious policy with regard to the Mesopotamian campaign. He immediately telegraphed to the viceroy that it was "imperative to stop the further advance of General Nixon's force." Orders to this effect were sent to Nixon on 5 October, and the advance on Bagdad was, therefore, apparently abandoned. But a cabinet meeting in London on the 4th, the day before Chamberlain's wire, considered that "if forces available are sufficient to take and hold Bagdad, political reasons were thought to make its occupation desirable." On the 8th Mr. Chamberlain telegraphed to India, "The Cabinet are so impressed with great political and military advantages of occupation of Bagdad that every effort will be made by us to supply the force that is necessary. We do not wish to attempt it with insufficient forces." In reply to a question as to what reinforcements he would need, Nixon gave his opinion that his present force would suffice to take Bagdad, but that he would require another division and one cavalry regiment to occupy the place permanently. He also asked for more river craft. The general staff at the War Office decided that Nixon should have two more divisions, which would take some two months to reach him. Some cavalry, infantry and artillery were sent up to Townshend, though by no means sufficient for the attempt. In a dispatch to the viceroy on 21 October, Mr. Chamberlain added a warning that some 60,000 Turks might be concentrated at Bagdad by January, though only about 10,000 were in that district at the time. To this the viceroy responded that "the right policy was to take the risk." On 23 October the *fiat* went forth from London, "If Nixon is satisfied that the force he has is sufficient, he may march on Bagdad." Unfortunately, the warning about the possible Turkish concentration was not forwarded to General Nixon, because the telegram containing it was marked "private," and he was left in the dark on this most important point. On receiving his instructions to advance, General Townshend protested — an exceptionally rare step for a soldier to take. As subsequent events proved, both he and the cautious statesmen at home were in the right; the government acted on what proved to be the mistaken advice of the experts. Far more important than additional troops was the question of transport, and that, it appears, was the point overlooked by the military authorities — the possibility of rapidly moving the proposed large reinforcements up-river from Basra to Bagdad, a distance of 500 miles.

General Townshend had at his disposal about 15,000 men by this time, but practically no reserves to support him, the remainder of the troops in the country being required to guard the lines of communication, which were 290 miles from Kut to Basra, and would be prolonged to 500 miles if the expedition advanced to Bagdad. Besides this, his men were physically debilitated by their previous strenuous fighting in the hot months, and his British battalions were 30 per cent below strength. About one-third of the force were white soldiers, British regulars and territorials; the rest were Indian troops. A motley collection of paddle steamers, sloops and flat-bottomed punts formed the flotilla that was to accompany the expedition. British aeroplanes reported that the enemy was falling back on Ctesiphon, his last defense south of Bagdad. Although government sanction to the scheme was given on 23 October, Townshend did not actually move forward till the middle of November, a delay of six weeks, due to insufficiency of the river transport for the movement of supplies. Moreover, it was uncertain when the promised reinforcements of two divisions from Europe would arrive at Basra, from whence their transport to the front must take weeks or even months. Speed was the prerequisite to success; Townshend was aware that if he could not forestall the enemy the latter would most probably forestall him. During the concentration supplies and transport animals had been sent up. Throughout the period of preparation frequent skirmishes occurred with the Turks, who had pushed out advanced detachments to within seven miles from Azizie, where the bulk of the British troops had arrived by 23 October.

On 11 Nov. 1915 Townshend's cavalry brigade and one infantry brigade advanced from Azizie and occupied Kutunie (14 miles) without opposition, and by the 18th his whole force was concentrated here, together with his river flotilla. The advance was continued on the 19th, moving by both banks of the river; after offering slight opposition the Turks fell back toward Ctesiphon, their stronghold. The British force on the left bank of the Tigris reached Lajj on the 20th; that on the right bank and the boats arrived the following day, when both land forces combined on the left bank. The Turkish force at Lajj was attacked on the same day and driven out. It was evident that the Turks did not intend to offer any determined resistance, being content to let the British stretch their line of communications and tire themselves out until they should arrive at Ctesiphon, where the Turkish position was entrenched on both sides of the river. With the least possible delay Townshend pushed on to his goal, for he had learned only on the 17th that 30,000 Turks were on the march down from Anatolia, which would augment the enemy to more than 40,000. To meet this force there were barely 25,000 British troops in all Mesopotamia, including lines of communications. Already at Lajj the aeroplane scouts had reported, "they are coming on in thousands." For months the Turks had been constructing their defenses, consisting of an extensive system of entrenchments forming two main positions. The first line on the right bank extended from the river for three miles to the southwest, with the second line about five miles farther upstream. A continuous line of trenches and redoubts stretched for six miles

on the left bank, with a second line two miles to the rear, running parallel with the first for three miles, and then turning northward for another three miles to the Diala River. Between the two extremities of the first and second lines on this side the Turks had formed up a straight line of reserves against a flank attack, thus forming practically a square, with the Tigris as the right flank. A mile behind the second line a pontoon bridge across the Tigris connected the left wing with the right on the other bank, while the Diala was bridged at two points near its junction with the Tigris, and these crossings were commanded by entrenchments. According to reports Nureddin Pasha, the Turkish commander, had over 13,000 regular troops and 38 guns; against these, plus a formidable position, Townshend had only some 11,000 effectives available. But the majority of the enemy were troops that had already been defeated several times in Mesopotamia. Moreover, before the battle, General Townshend was not informed of the proximity of Turkish reinforcements — apart from the 30,000 referred to above — whose arrival on the scene was to change his victory into defeat. The Turk has a fine reputation as a fighter; up to this stage of the Mesopotamian campaign the Turks had been driven back from one position to another so long as they retained a large proportion of Arab troops in their ranks. These were rather a source of embarrassment, for they hated the Turks, who never cared to learn their language or understand them, and as a subject race they were stirred by no feelings of patriotism — a virtue which is replaced by tribal adhesion and religious fraternity. But on the other hand, as time went on and the proportion of Arab troops diminished, the stouter Turks took their place, and the Turkish army in Mesopotamia became a very efficient German-trained machine of devoted soldiers. Heavy reinforcements of this type arrived at the battle in the nick of time.

In a night march from Lajj, General Townshend with his force covered the nine miles to Ctesiphon on 21–22 Nov. 1915 and attacked the Turkish position on the left bank at the centre and on the northeast flank, round which the cavalry was thrown to hinder a possible retirement. A severe fight developed and lasted from dawn throughout the day. Early in the morning bodies of enemy troops were observed moving northward, giving the impression that they were retreating from Ctesiphon. The British cavalry attacked that flank which was apparently in retreat, when it wheeled into line and made a stand that revealed an overwhelming force. On the front the British pressed on, stormed the first line, captured eight guns and established themselves in the trenches. They were subjected to fierce counter-attacks by fresh reserves. Townshend's men penetrated to the second line and captured those trenches as well, but the enemy continued to pour reserves into the field and forced the British to abandon the advanced positions shortly before nightfall and retire to the first-line trenches. In the conflict the captured guns changed hands several times. The British casualties were heavy, and the 23d was mainly devoted to collecting the dead and wounded. The Turks also lost heavily; the battlefield was covered with killed and wounded and many of the trenches were choked with their dead. Those troops which had held the front line were practically annihilated. More reserves came up and attacked the British in their captured trenches during the whole night of the 23–24 November, but these were repulsed with heavy loss. In the first day's battle the British took 1,300 prisoners. On the 24th the wounded and prisoners were removed from Ctesiphon to Lajj, where the flotilla was banked in, being unable to advance, owing to the Turkish batteries on the right bank. Beyond artillery action there was little activity on that day. Townshend still held the enemy's front line, but it became increasingly apparent that he was hopelessly outnumbered. Matters looked threatening on the 25th; large enemy columns were advancing down the left bank and also inland, as if to turn the British right flank, while hostile cavalry menaced the rear. To make things worse, Townshend was short of supplies; he had lost over 4,000 men in killed and wounded; his air force had suffered a series of accidents during the battle; several of his machines had been obliged to descend within the enemy's lines; his men were worn out, and he had no reserves to draw upon. Furthermore, he was nine miles from his nearest base at Lajj. In these circumstances he perforce decided to avoid another engagement and withdrew to Lajj during the night of the 25th. He remained here during the 26th, but the position was most unfavorable for defense, so he withdrew unmolested back to Azizie in the night of 27–28 November. Engagements were fought with advanced Turkish cavalry near Kutunie on 29 November and on the 30th at Umm at-Tubal, about 25 miles below Kut, where the river shipping was in difficulties in shallow water. The British continued their retreat upon Kut, fighting rearguard actions without intermission. On 1 December the whole Turkish force attacked at Umm at-Tubal, but was repulsed after a severe fight, during which Townshend took advantage of a successful counter-attack by his cavalry against a column attempting to envelop his right flank, to break off the fight and retire by echelons of brigades. He reached Kut with the exhausted remnant of his troops on 3 December. Thus ended the Pyrrhic victory of Ctesiphon, in which the British lost about 700 killed and 3,800 wounded — a loss of over 30 per cent.

During the retreat the river gunboats *Shaitan* (Devil), *Comet* and *Firefly* were run ashore and had to be abandoned. Townshend at once took steps to withstand a siege in Kut until the arrival of reinforcements which were coming from overseas. Two Indian divisions had arrived in Egypt from the Western Front *en route* for Mesopotamia. The defenses of Kut were improved; sick and wounded and 1,350 Turkish prisoners were sent by water to Basra, leaving only an armed tug with Townshend. On 6 December the cavalry brigade and a convoy of transport animals were marched down to Ali Al Gharbi; on the same day the Turks closed the northern front, and on the 7th the investment of Kut was complete. On the 8th the Turks began bombarding Kut from three sides and Nureddin Pasha called upon Townshend to surrender. The British position lay in a U-shaped loop of the Tigris; the town

stands at the southernmost end of the peninsula (about a mile wide) thus formed, while the northern defenses were some 3,200 yards from the town. The British cavalry now at Ali Al Gharbi was reinforced with infantry and guns from Basra; behind this advanced detachment a relief force was organized under Major-General Aylmer, who on 4 Jan. 1916 advanced along both banks of the Tigris from Ali Al Gharbi toward Sheikh Saad and attacked the Turks three-and-a-half miles east of the latter place. Heavy fighting developed on both banks, and on the 9th the enemy was forced from his positions at Sheikh Saad, retiring upstream about 10 miles to another fortified line at the junction of the Tigris with the Wadi River, 25 miles from Kut. Aylmer drove the Turks from this line on the 14th, compelling a further retirement of five miles. General Nixon, the commander-in-chief of the British Expeditionary Force in Mesopotamia, resigned, owing to ill-health, on 10 January and was succeeded by Lieut.-Gen. Sir Percy Lake. Throughout these operations heavy rain and high wind caused great discomfort to the troops and made movement most difficult, both by land and river. The Turks had established across the river a series of very strong positions. Nearest to Kut, eight miles away, was the Es-Sinn position; farther down, toward the British, came successively the Sanna-i-Yat, Fellahieh and Umm-el-Hanna defenses. Flanking these last-named positions on both sides of the river were marshes, and the entire country was roadless. Three further important attempts were made to relieve Townshend's beleaguered army. Between 19–23 Jan. 1916 Aylmer endeavored to force a defile held by the Umm-el-Hanna lines on the left bank. The enemy front trenches were actually rushed, but supporting troops lost direction and under heavy fire failed to reach the objective, when a counter-attack caused the abandonment of the conquered terrain. A period for rest and reorganization followed in February. On 7 March Aylmer decided, in view of the possibility of his troops being flooded out by the cutting of the dikes, to leave the three lower lines of Turkish defense and to drive against the stronger but final line at Es-Sinn. With this object two columns made a difficult forced night-march through the desert right across the enemy's front. One column reached the appointed spot unobserved, the other came too late to achieve the purpose — the capture of the Dujailah redoubt. After a whole day's fighting almost within view of Kut the attempt failed and the columns retired again to the Wadi lines. Fresh troops began to arrive up-river during March and a renewed attack was planned on the left bank. Major-General Gorringe took over the command of Aylmer's corps on 12 March. On 4 April General Maude's division stormed the Umm-el-Hanna position, 23 miles from Kut. During the night of 8–9 April an assault was made on the Sanna-i-Yat lines, but without success.

The third desperate effort to relieve Kut had failed. Within the town itself matters looked black. Heavy Turkish bombardments had begun 10 Dec. 1915, followed by infantry charges, which were repulsed. On the 23d and 24th Nureddin Pasha made a furious attempt to storm the place, and even succeeded in piercing the British line. Throughout the winter the Turks maintained an impenetrable ring around the besieged garrison. Food grew scarce; the natives and the dealers in Kut hid all their stock of foodstuffs and lived on the rations served out by the British until a systematic search unearthed large quantities of provisions. Aeroplanes from the relief columns outside the ring flew high over Kut, but could not descend owing to the close proximity of the Turkish guns. There was but one flour mill in Kut, and from that the Turks had removed the millstones when they abandoned the place. The deficiency was remedied by British aviators carrying a set of millstones in their areoplanes and dropping them within the lines. During the cold weather firewood was doled out by the half-pound. It became necessary to slaughter the horses and battery bullocks for food. The native population was fed by public soup kitchens. Scurvy broke out among both the military and the civilians. While the three attempts at relief were being carried out the Turks kept up a stream of high explosive bombs, which they fired into the town from trench mortars. Enemy aeroplanes began in February to drop bombs on the town, not on the military works. The natives were the principal sufferers by these raids; nor did the marking of hospital buildings with conspicuous Red Cross signs avail, for a bomb was dropped on the main hospital, killing 30 of the sick and wounded inmates. On 8 March 1916 the Turkish (or German) commander sent an officer under the white flag to demand surrender — in vain. Rations were still further reduced; Townshend was nearing the end of his resources when a heroic but vain attempt was made to break the blockade of the river. The *Julnar*, one of the fastest steamers on the Tigris, manned by a volunteer Royal Navy crew under Lieutenant Firman, R.N., and Lieutenant-Commander Cowley, R.N.V.R., started in the dark from Fellahieh on 24 April with 270 tons of supplies on board. Under fierce fire from both banks the devoted "forlorn hope" ran the gauntlet through the Sanna-i-Yat and Es-Sinn defenses to the vicinity of Megasis fort, a total distance of some 15 miles. Both officers fell on the deck, Cowley at the wheel; at full speed the unguided vessel rushed on in a sinking condition and grounded on a mudbank. For the next few days Kut was provisioned by sacks of flour and food dropped from aeroplanes, a measure which, had it been adopted earlier, might have enabled Kut to hold out till the arrival of relief. The provisions thus supplied were far short in quantity of what was needed; they were doled out in quarter rations. On 27 April General Townshend, acting on wireless instructions, went out to treat with the Turkish commander, Khalil Pasha, who demanded unconditional surrender. There was nothing else to do. The 28th was spent in Kut preparing for the inevitable: guns and rifles were smashed, officers and men snapped their swords under their feet; field glasses were destroyed and revolvers thrown into cesspools; ammunition was dumped into the Tigris in the night, and on 29 April 1916 the British flag was hauled down and the white flag took its place. A weary, half-starved and broken force laid down its arms after a gallant resistance of 143 days. It

consisted of 2,970 British and 6,000 Indian troops, with an army of about 5,000 camp followers.

The fall of Kut created a painful impression among the Allies in general and throughout the British Empire in particular. A parliamentary commission was appointed in August 1916 to inquire into the operations in Mesopotamia and to report thereon. The commission, which was invested with many of the powers of the British High Court of Justice, examined on oath over 100 witnesses, including Mr. Austen Chamberlain and Lord Crewe, respectively secretary and late secretary of state for India, Lord Hardinge, viceroy of India, two ex-commanders-in-chief in India, General Nixon, and all the chief officials concerned in the Mesopotamian campaign up to the summer of 1916. General Townshend, being a prisoner of war, naturally could not testify. The commission consisted of Lord George Hamilton, chairman, Lord Donoughmore, General Lyttelton, Admiral Bridge, Lord Hugh Cecil, M.P., and three other members of Parliament. The commissioners issued a voluminous report in June 1917. They found that while the conditions of the campaign in Mesopotamia required a standard of preparation and equipment above the ordinary, the Indian army was not even up to the ordinary standard in these matters on the outbreak of the war. This was due to the campaign of military economy which, by agreement between the home and Indian governments, had been pursued in India for many years before the war. The supply of artillery had been cut down both in quantity and quality; the number of troops available for immediate mobilization was reduced, and the army generally was only equipped for frontier warfare against savage tribes. The Indian army was, therefore, in all respects in a less favorable position to confront modern troops than it was at the time of the South African War, 1899–1902. The commission placed the chief responsibility upon the Indian government and recommended certain alterations in the administrative system to insure closer co-operation between the military and civil departments. The undertaking of the expedition was not condemned: "Up to the date of the advance on Bagdad (says the report) continuous victory has been achieved . . . We are of opinion — reviewing the operations as a whole — that it may now [1917] be truly asserted that, in the many parts of the world in which the Allied forces have been engaged, no more substantial results or more solid victories have been achieved than those won by the gallantry of the British and Indian armies on the stricken plains of Mesopotamia."

While the events so far described in this chapter were being unrolled in the southeastern theatre of war, other things, partaking of the nature of a sideshow, were happening farther east, in Persia. That country was neutral, and remained so during the war. But the German minister in Teheran, Prince Reuss XXXI, had been sowing the seeds of Pan-Germanism in Persia since the summer of 1914 and had succeeded in gaining the sympathies of several Persian ministers, the gendarmerie, under Swedish officers, and some of the tribesmen for the German cause. Risings were fomented throughout the country; British civilians were arrested in Shiraz and Yezd, and there seemed every probability of Persia being dragged into the whirlpool in accordance with the German "Holy War" scheme. The revolt of the 6,000 gendarmes led to the murder of a British and a Russian vice-consul. Immediate steps became necessary to prevent the flame from spreading and to protect the legations. The Russians in Transcaucasia were nearest to the spot, and in the middle of November 1915 General Yudenitch dispatched two columns into the country; one, under General Baratov, pushed southwestward through Hamadan to Kermanshah, on the way to Bagdad. A small cavalry force established communication with the British Mesopotamian force. The possession of Kermanshah was strongly disputed, and the Russian column was held up before reaching the southern plains. The second column advanced through Kum and Kashan to Ispahan, the ancient capital, on 20 March 1916. The first column entered Teheran at the end of November, but the German, Turkish and Austrian ministers had departed from the city on the 14th, after endeavoring to induce the young shah to accompany them and thus put himself into German hands. Torn by conflicting advice, the 17-year-old shah followed the wiser counsels of Prince Firman Firma and a few others and took a strong stand for the Allies. He refused to go and join the Austro-German-Turkish *corps diplomatique* waiting for him six miles away at the village of Shah Abdul Azim. His decision led to an interesting sequel three years later, when he stepped from a special train in London and was welcomed by King George and the Prime Minister on 31 Oct. 1919. On the following day (1 November) he was conducted in royal state to the Guildhall as the guest of the lord mayor, and in reply to the latter's speech of welcome Ahmed Shah referred in fluent French to "the strong bonds of friendship which have existed for so long between Persia and Great Britain." To return to 1916. While the Russians were operating in northern Persia, Sir Percy Sykes, many years a resident in the country and author of perhaps the best history of Persia, led the British column of intervention in the south. The native gendarmerie was disbanded in 1916 and the Persian government accepted a British offer to place at their disposal a number of British officers to organize a new force.

It is now time to introduce a new belligerent, one whose name has not yet appeared in these records — the Senussi brotherhood, a tribe of Mohammedans forming a kind of religious fraternity and inhabiting the great stony plateau known as the Libyan Desert in North Africa, between Egypt and the Italian territory of Cyrenaica, which, together with Tripoli, had become Italian by the war with Turkey in 1911–12. After the close of that war, the Turks had not withdrawn the whole of their forces from that territory as agreed upon by the Treaty of Lausanne. Those troops which remained — either forgotten or neglected — continued a spasmodic and desultory campaign against the Italians with the aid of Arab tribes from the interior. Those tribes inhabiting the Libyan Desert acknowledge in a loose way the authority of the Senussi of Sollum, an authority more religious than political. In November 1904 the British government had notified Turkey

and Italy that the western frontier of Egypt ran up to and included Sollum. During the Tripolitan war the Italians established a blockade of the Cyrenaican coast to some 100 miles east of Sollum, to which the British government objected. The Italian claim was waived and an Egyptian force occupied the fort of Sollum in December 1911. For the following three years an irregular warfare had been conducted by these Arabs against the Italians, as mentioned, and also against the extension of French rule in the Central Sudan. When the European War broke out the Turks had on their side in Northern Africa a respectable force of at least 30,000 men, consisting of a nucleus of Turkish troops, with Arab, German and Turkish officers, some 5,000 well-trained Senussi, and a liberal supply of field artillery and machine guns. Considering that Turkey possessed not an inch of territory in Africa in 1914, it must be regarded as remarkable that such preparations could have been made under German auspices on Italian and Egyptian (British) territory. Hitherto the Grand Sheikh of the Senussi, Sidi Ahmed Sherif, had lived on terms of friendship with Anglo-Egyptian authority; he and his people were not opposed to British rule in Egypt, and his official representatives lived in Cairo in cordial relations with the government. By the end of 1914 the whole interior of Cyrenaica was held by the Senussi, and when Italy entered the war in May 1915 the Italian army of occupation fell back to the coast, leaving the inland tribesmen to their own devices. Signs of unrest soon began to appear, due to the intrigues of Nuri Bey, a half-brother of Enver Pasha, who came to Tripoli to negotiate with the Senussi and the Tripolitan Berbers. He met with little success at Sollum, for he had nothing to offer beyond promises. The subsequent arrival of Gaafer Pasha, a German convert to Islam, with money and arms, altered the case. By November 1915 all was ready, with Gaafer Pasha in charge of the campaign. The chief danger to be feared on the British side was that a "holy war" in western Egypt might spread disaffection in that region. From Alexandria a railroad runs along the coast for about 150 miles westward to Mersa Matruh, a Mediterranean port; beyond that there lay the Egyptian forts of Sidi Barani and Sollum, respectively 150 miles and 200 miles from Mersa Matruh. The garrisons were withdrawn from the forts to Matruh, where a considerable force was concentrated, consisting of a New Zealand brigade then training in Egypt, detachments of the Australian Light Horse and the British Yeomanry, and the 15th Sikhs, Indian infantry, altogether about 3,000 men. In November 1915 the Senussi made a swift raid over the frontier; they were joined by the Bedouins of the Walid Ali tribe, and quickly overran nearly 200 miles of Egyptain territory. An advanced force of 1,200 Arabs reached the outskirts of Matruh on 13 Dec. 1915, and were driven back with heavy loss. On Christmas Day an onslaught by 3,000 Arabs was completely routed by the British infantry, the cavalry sweeping up most of the enemy's transport and supplies. Another attempt was made by the Arabs on 13 Jan. 1916, which also failed; on the 23d Major-General Wallace, reinforced by part of a South African brigade, fell upon the enemy in two columns and inflicted a crushing defeat on 4,500 Turks and Arabs, driving them back in utter confusion. Before long the tribesmen quarreled among themselves; many of them came half-starved into the British lines and begged to be protected against their former allies. The south Africans and the Dorset yeomanry under Brig.-Gen. H. T. Lukin pursued the fleeing enemy and defeated him again when attempting a stand at Barani. The Dorsets "with one yell hurled themselves upon the enemy, who immediately broke," reported Colonel Souter, who commanded the Dorsets. "In the midde of the enemy's lines my horse was killed under me, and by a curious chance its dying strides brought me to the ground within a few yards of the Senussi general, Gaafer Pasha." (26 Feb. 1916). The Pasha and his whole staff fell prisoners to the British. On 9 February General Peyton took command of the operations and proceeded to follow the enemy up to Sollum on the Italo-Egyptian frontier. The British columns were supported by units of the navy operating along the coast, landing supplies and munitions where required. British aeroplanes kept the oases spread through the desert under constant observation while a transport train of 2,000 camels kept all units provided with necessaries. Large numbers of Bedouins and prominent sheikhs deserted from the enemy and appealed to General Peyton for pardon. On 9 March a general move began from Barani in the direction of Sollum; the first column, comprising all the infantry and slow moving troops, started with orders to secure a foothold on the inland plateau by the Nagb Medean Pass. These were followed by two battalions of infantry, a camel corps company and some armored cars under General Lukin along the top of the escarpment, while the remainder of the forces pushed ahead by the coast. In the morning of 14 March both columns approached Sollum. Aviators reported that the enemy was evacuating his camps; a hostile camp was located some 20 miles to the west, where the armored cars, under the Duke of Westminster, were sent. In the engagement which followed here all the enemy's guns and machine guns were captured, together with a number of prisoners including Turkish officers. The only British casualty was one officer slightly wounded. Sollum was reoccupied, and the northern column of the enemy was eliminated. In about three weeks the country had been cleared for 150 miles, the Turkish commander and all his artillery captured, and the rest of his troops scattered far beyond the Egyptian frontier. It was known that, somewhere about 75 miles west of Sollum, within Cyrenaica, about 95 British prisoners were held by the Senussi. These were survivors from two British vessels torpedoed off the coast in the previous November. To effect their deliverance the Duke of Westminster was dispatched on 17 March with a light armored car battery and some motor ambulances. A distance of 120 miles had to be covered through an unknown country against an enemy of unknown strength, but the expedition returned safely with all the prisoners rescued. The Senussi campaign was over. The Walid Ali tribes surrendered in such numbers that it became a serious problem for the British to supply food and provide a special branch of administration for their protection and control. Meanwhile, a subsidiary campaign

had been in progress in the western Sudan, where Ali Dinar, Sultan of Darfur, had ruled since 1899 under British-Egyptian suzerainty. This potentate assumed a defiant attitude when Turkey entered the war and prepared to attack Kordofan. In May 1915 an Egyptian force under Colonel Kelly defeated the Darfur troops and occupied El Fasher, the capital. Ali Dinar fled westward; he was pursued, overtaken 6 November at Sugai, in French Central Africa, and killed. With his death the rebellion was crushed.

From the burning, waterless deserts of Africa we return to the frosty Caucasus and that region beyond known as Transcaucasia, where we left the broken Turkish force retreating through the snowdrifts before the Russians in January 1915. During that winter the Turks had been carrying out a series of wholesale massacres and deportations among the hapless Armenians, whose country then belonged, split into three unequal portions, to Turkey, Russia and Persia. A representative meeting of Russian Armenians assembled in Tiflis, Caucasus, during August 1914, was promised autonomy for Russian Armenia by the imperial government, to take effect after the war if their people would loyally support Russia in the conflict. The proposal was agreed to, and nearly 200,000 Armenians served with the Russian colors. A similar meeting of Turkish Armenians was held about the same time in Erzerum, at which a delegation of the Turkish Committee of Union and Progress attended. Here, also, a promise of autonomy was offered on the twofold condition that the Turkish Armenians not only should support Turkey in the war, but also induce the Russian Armenians to rise against Russia. If these terms were accepted, the three severed portions of Armenia were to be reunited under Turkish suzerainty. The Turkish Armenians, however, were quite willing to remain loyal to their government, but declared their inability to agree to the other proposal, that of inciting their compatriots under Russian rule to insurrection. There was a deep significance behind the Turkish proposal; the plan was to draw the Persians, Kurds, Tatars and Georgians into a holy war against the Allies, and in order to carry this project it was necessary to make sure of Armenia, for if that country were hostile its geographical position would hamper co-operation between the Mohammedan races included in the scheme.

The rejection by the Turkish Armenians of that one condition led to serious consequences for themselves and incidentally proved of inestimable benefit to the Allies, for if the whole nation had gone against Russia, that country might have encountered defeat instead of victories early in the war, with the result that the Central Powers could have transferred large armies from the Eastern to the Western Front already in 1915 instead of 1917. From the moment of Turkish participation in the war the destruction of Armenia was decided upon. The ghastly story of how this program was carried out has been vividly described by many authorities and eye-witnesses, notably, American missionaries, Mr. Henry Morgenthau, United States Ambassador in Turkey, Lord Bryce and Dr. Harry Stuermer, a former German army officer and war correspondent ('Two Years in Constantinople'). Thousands of the Armenian population of Asia Minor were either killed on the spot during 1915 or else deported into the most inhospitable parts of the Turkish Empire, there to die of starvation, exposure and exhaustion. The total number of those who were thus done to death is not exactly known, but it was large enough to brand the procedure as "one of the most shamelessly brutal race massacres of all time" ('War Cyclopedia,' issued by the United States government, 1917). The instigators of these atrocities, which spread over the first eight months of 1915, were Enver Pasha and Talaat Bey; the latter told Mr. Morgenthau in Constantinople, "I am taking the necessary steps to make it impossible for the Armenians ever to utter the word autonomy during the next fifty years." Irregular bands ravaged the district around Erzerum and Bayazid, slaughtering mercilessly and driving the wretched survivors into Russian territory. Many thousands were butchered like sheep at Bitlis, Diarbekr, Angora, Van, Trebizond, Mush, Jebel Musa, Urfa and Mosul. It was estimated that over half a million perished, while great numbers of women and children were sold into slavery. It was the climax of five centuries of Turkish domination.

Throughout the spring and summer of 1915 the Russian and Turkish armies in Transcaucasia fought several engagements of which little news leaked out. The Russians were holding the southeastern gate while greater events were happening on their far-flung eastern lines in Europe. Early in May an action was fought at Dilman, just inside the Persian frontier, northwest of Lake Urmia, in which the Turks were severely handled by the Russians. Early in September the tsar nominally took personal command of his armies and the Grand Duke Nicholas was sent to the Caucasus as governor and commander-in-chief. The Turkish forces in this region were increased to some 100,000 men in anticipation of a Russian move. It seemed to be the Russian plan to detain as many Turkish troops in this theatre as possible to prevent reinforcements being sent to Mesopotamia or the Dardanelles. On the other hand, a Turkish embarrassment elsewhere would place the grand duke in a position to strike a blow from behind. Beyond inflicting a slight defeat on the Turks near Van in October there was no immediate resumption of hostilities. The Persian revolt was crushed by 20 Dec. 1915, and on 17 Jan. 1916 the Russians made a sudden attack on the Turkish centre at Koprikeui and broke it over a front of 66 miles. The Turks retreated in haste on their stronghold at Erzerum, 60 miles away, with the Russians close on their heels. On the 21st the latter were already shelling the fortress, but the attack was temporarily held up by severe weather. On 11 February the Russians launched a fierce assault, and after a five days' struggle Erzerum surrendered (16 February) with 235 officers, 12,750 men and 312 guns. Pressing swifty onward, General Yudenitch, the Russian commander, led his Cossacks into Mush and Akhlay, pushed south and entered Bitlis on 2 March. Two days later a Russian force was landed at the Black Sea port of Atina and passed rapidly along the coast to Trebizond, which fell to them on 18 April. The Turks rallied a little after the surrender of Kut and temporarily recovered some lost ground in Armenia, but by the middle of July the Russians were again

on the move, capturing Baiburt, between Trebizond and Erzerum on 15 July and Erzinghian, 100 miles west of Erzerum, on the 25th. This rapid and victorious advance was made possible by the power of the Russian Black Sea fleet, which dominated that inland water so long as Russia remained in the war. The addition of the *Goeben* and *Breslau* to the Turkish fleet was never more than a temporary annoyance. Turco-German submarines were sent out on several occasions and copied the tactics of the U-boats generally in sinking not only merchantmen but also hospital ships; they had no success of any consequence against the Russian fleet, nor did they interfere with the blockade of the Bulgarian and Turkish coasts and ports. Under the control of Vice-Admiral A. V. Kolchak, who succeeded to the command in August 1916, the Black Sea fleet was brought to a high level of efficiency, comparing very favorably with the Baltic ships. The entry of Rumania into the war on 27 Aug. 1916 did not affect the naval position. A severe loss befel the Russians on 20 Oct. 1916 in the destruction by fire and explosion of the dreadnought *Imperatritsa Marie* with 200 lives. In regard to its use of submarines and aircraft the navy also did effective work in the Black Sea. On one occasion, during a seaplane raid on Derkos, northwest of Constantinople, a machine was damaged and compelled to alight on the water. While descending the two occuptants observed a Turkish schooner, and by means of their machine gun drove the crew from the deck, leaving the way clear for them to board and capture the vessel. With the capture of Erzinghian the whole of Turkish Armenia was now in Russian hands. During August the Turks recovered Mush and Bitlis and lost them again within 17 days. On 30 Sept. 1916 Turkey declared war on Rumania.

Yet again a fresh belligerent appears upon the scene, this time to throw in his lot with that of the Allies as against Turkey — Hussein ibn Ali, the Grand Shereef of Mecca. Shortly after the surrender of Townshend at Kut, this Arabian potentate notified the British government that he could no longer stand aside and witness the continued subjugation of the Arabs to their Turkish rulers. He asked for money, arms and food for his troops, and before they had been promised him broke out into rebellion against the Young Turkey party and their German masters and declared the independence of the Hedjaz. The Arabs had suffered badly at the hands of the Turks, and were not unmindful of the fact that millions of their coreligionists lived contentedly under the protection of Great Britain and France, who respected their creeds and permitted absolute religious freedom. What contributed largely to bring about the unlooked-for intervention of the Arabs was the proclamation issued to Indian Mussulmans by the Agha Khan (q.v.) at the outbreak of the war. Also, the Indian government had announced in November 1914 that the holy places of Arabia, including the Holy Shrines of Mesopotamia and the port of Jeddah, would be immune from attack or molestation from the British forces so long as there was no interference with pilgrims from India to the holy places and shrines in question. The governments of France and Russia had given similar assurances. Hussein ibn Ali and his family carried all the Arabs of the Hedjaz with them when independence was declared on 9 June 1916. They immediately backed their challenge with deeds by attacking and capturing the Turkish garrisons in Taif, Mecca and Jeddah. They next opened up communications with the British fleet in the Red Sea so that the arms and food they required for their campaign could be brought to their coasts. The Shereef's two sons, Feisul and Ali, raised their father's flag of revolt in Medina on 13 June. The Turks were not unprepared to meet the new situation; they had brought down large forces from Syria in anticipation of hostilities. Feisul rallied all the tribesmen and villagers around Medina, but shrank from an attack upon the holy city itself. They tore up a part of the Hedjaz Railway with their bare hands, in the absence of explosives, and threw the rails down the embankments. But they refrained from cutting the water conduit and refused to clear their way by fighting through the streets. By this scrupulous regard for the city containing their holiest shrine — the tomb of the Prophet — they lost their opportunity. The Turkish garrison in Medina, encouraged by the inactivity of the rebels, made a sortie early in the morning, took the garden suburb of Awali by surprise, massacred some hundreds of women and children and set the place on fire. By the time the havoc had been wrought, Feisul dashed up with his Arabs mounted on camels and harassed the rear of the retiring Turks. Yet he still wavered when his men demanded to attack the fortress outside the city walls; they even rushed to the charge without him, but they were stopped by well-directed artillery fire, a new experience to the sons of the desert. The Turks sent out an enveloping force to cut off the Arab van, a move that was detected by Feisul a mile to the rear. Under a withering shrapnel fire he now took the lead against the sortie force, maintaining the struggle till nightfall, when his ammunition was nearly exhausted. He had no reserves and was also running short of food. The British were meanwhile establishing a base for Feisul at Rabegh on the Red Sea, about 100 miles north of Jeddah. The Turks were well provided with guns, machine guns and aeroplanes; they repaired the broken railroad, received further supplies from Syria, and made an advance toward Rabegh, to the north of which Feisul had retired with his disheartened followers. Immediate action was imperative to check the Turkish advance, for, with Rabegh once in their hands, Mecca would be in danger. In consultation with British naval officers in the Red Sea, Feisul determined to risk leaving the Mecca road undefended and carry his whole force away from Yenbo and attack Wejh, 200 miles farther north along the Hedjaz coast, striking against the Turkish communication with Syria — the Hedjaz Railway. By this move he hoped to compel the enemy to divert a considerable force for defensive purposes and perhaps abandon the march on Mecca. Feisul placed his younger brother Zeid in command of a handful of men to make a show of resistance in the hills, and requested his elder brother Abdullah, who had been blockading Medina on the east, to move across the railway north of Medina and pretend to threaten the

Turks' line of communication directly. Though Abdullah had no adequate force to perform any serious enterprise, he succeeded in cutting up some scattered Turkish units. Feisul embarked all his arms and stores from Yenbo el Bahr on British ships and divided his 10,000 men into nine units, to move northward separately and concentrate at Um Lejj by 14 Jan. 1917. On arrival here he provided his men with fresh supplies from the ships and embarked a landing party to be used in the attack on Wejh in co-operation with the navy. With the rest of his army Feisul set out on a march of 150 miles along a route notoriously short of water. Many camels died on the road; a Royal Indian marine ship put into an uncharted bay on the coast and supplied the caravan with water in the middle of a dry march of 75 miles. The navy and the landing party had settled the business at Wejh before the army arrived on the scene; Feisul was in time only to cut off some of the escaping garrison and capture all their reserves of arms and equipments. The ships' guns supported the landing parties, and after some difficult street fighting in the town the Arabs cleared the Turks out to the last man. The whole proceeding took 36 hours. The British warships took other landing parties and set them ashore at Dhaba and Moweilah, so that by the middle of February 1917 the whole northern end of the Red Sea up to the Gulf of Akabah was cleared of the enemy. This picturesque campaign, of which but little was heard at the time, demonstrated once more the overwhelming advantage which sea power gives to an inferior and ill-equipped force over an enemy superior in strength but dependent entirely on land communications. In November 1916 the Grand Shereef took the title of king of the Hedjaz, and was definitely recognized as such by the Allies. Perhaps the principal factor in establishing the new kingdom and restoring the Caliphate to the descendants of the Prophet was Col. Thomas Lawrence, a young Englishman and graduate of Oxford, who was studying archæological inscriptions in Mesopotamia when the war broke out. He was then 26. Without any knowledge of military affairs, Lawrence was appointed an officer in the British army. Dressed as an Arab, in a costume he wore like a native, he traveled through the country and united the various tribes against the Turks. His profound knowledge of the land and its languages made him an important personage in the eyes of the people. He had lived among Kurds, Arabs, Turks and Egyptians; he was a friend of Kitchener when the latter was High Commissioner for Egypt, and he even bore the title of Prince of Mecca. Mounted on a camel, he led the Bedouins into many fights against the Turks, who, with their German allies, soon discovered that some mysterious power inspired the Arabs. "Through their spies," wrote Lowell Thomas, "they learned that Lawrence was the guiding spirit of the whole Arabian Revolution. They offered a reward of $500,000 for him, dead or alive. But the Bedouins would not have betrayed their idolized leader for all the gold in the fabled mines of Solomon." (*Asia*, New York, September 1919.)

We now turn again to Egypt, where the Turkish attack on the Suez Canal had failed signally in 1915. From the beginning of hostilities the Anglo-Egyptian garrisons had been withdrawn from the Sinai Peninsula, where there was nothing of importance to protect. This desert region was at that time the only spot in the world where British territory was occupied by enemy forces, though for the reason that it was not defended. The Turks had the run of the ground, occasionally skirmishing with British mounted patrols. Early in 1916 the British had re-occupied the region of Katia, east of the canal, and were laying a light railway to that place. In May reports came that the Turks were preparing for another attack; in the middle of July a Turkish force of about 10,000 began moving west from El-Arish, carrying heavy guns manned by Germans and Austrians, and accompanied by an Arab camel corps under a German officer. Moving along the coast, the expedition was harried by British monitors from the sea. A Scottish territorial division was stationed 23 miles from the canal at Romani and spread seven miles to the coast at Mahamdie; Australian and New Zealand troopers protected the right of the line, while mounted detachments harassed the enemy's left. On 3 August the Turks delivered their attack. For over 20 hours the battle raged, and on the afternoon of the 4th the whole British front advanced. The result was quickly decided; the enemy line was completely smashed; Turks, Arabs and Germans fled in confusion, followed by British cavalry sweeping up masses of prisoners, guns and equipment. By the 7th the enemy had retreated 20 miles; he made a stand on the 9th, but was again pushed back. The enemy resistance was broken, and it now remained to clear the rest of the peninsula. Several heavy actions were yet to be fought, but by the end of February 1917 the Turks had been thrown back across the frontier at Rafa. The province of Sinai was freed after a two years' undisturbed occupation; only a few scattered patrols remained behind, all that was left of the army destined to reconquer Egypt, Turkey's promised reward for her participation in the war on the German side.

There is little more to add concerning the Russian operations in Armenia and Persia. Early in 1917 General Baratov began a fresh offensive against the Turks by pressing southward through Persia toward the common Allied objectives at Bagdad and beyond. He reoccupied Hamadan, which he had lost to the Turks the previous August, and caused the enemy to retire toward the Mesopotamian border, where they were attacked and dislodged from the Assabad Pass. The Russians occupied Kermanshah and Harunabad, and by 17 March were at Kerind, only 150 miles from Bagdad. A squadron of Cossacks, composed of five officers and 110 men, crossed the Pushtikuh hills through snow-laden passes 8,000 feet high, covered 180 miles and reached the British camp at Ali Gharbi in Mesopotamia on 18 May. If report be true, the night of their arrival was celebrated with song, dance and hilarious conviviality. During May the main Russian body was obliged to retreat before superior Turkish pressure and abandon positions on the border, including Khanikin. He fell farther back to Kermanshah, where he was still 250 miles from the army's main base at

Kasvin. Another move backwards to Hamadan became necessary, and that place also had to be abandoned. But the Turks were not able to attempt any fresh incursion into Persia. Revolt again flamed up in Persia; the government fell into difficulties and it seemed for a time as though German intrigues would gain the support of the country for the long-desired holy war. In the Caucasus the Russians held their ground; there was little fighting, the occupation of Van on 17 March being the chief incident of note. By degrees the Russian Transcaucasian campaign began to fall off; both Russia and Turkey had weighty preoccupations nearer at home. In May 1917, before Russia dropped entirely out of the war, the *Goeben* and several Turkish torpedo boats proceeded to Sevastopol, where the former German battleship sustained some damage which the dockyard workmen refused to repair. When, after the armistice, the Allied fleet found the *Goeben* in Stenia Bay, in the Bosporus, she had a Turkish crew on board under a Turkish admiral, Arir Pasha; the Germans on leaving had taken all the plans of the ship and her engines, with the fire control and other instruments, so that the Turks could only find out details of her mechanism by actual inspection. In Asia as well as in Europe the contribution of Russia to the Allied ultimate success had been enormous. Her great battles of 1915 and 1916 were of vital importance to the Allies as a distraction for the enemy while they trained their manhood and prepared a machine, equal at first, and later superior, to that possessed by the principal enemy.

After the surrender in Kut of General Townshend in April 1916, the British authorities in Mesopotamia and at home profited by the lesson of failure and began elaborate preparations commensurate with the task yet to be accomplished. On 28 Aug. 1916 Gen. Sir Stanley Maude took supreme command in Mesopotamia. Before any active operations could be undertaken with reasonable prospect of success it was necessary to improve the health and training of the troops, who had suffered severely from the intense summer heat, and to perfect the precarious lines of communications. Other *desiderata* were to develop the army's resources and to assemble reserves of supplies at the front. Basra remained the headquarters; its port was developed; railways were laid; men and material arriving from overseas were transported and placed in requisite position; everything that foresight could devise was promoted to assure success. During the latter part of October the new commander-in-chief in India, Gen. Sir Charles Monro, arrived in Mesopotamia and made an extended tour of the theatre of operations.

At the beginning of December the enemy still occupied the same positions on the Tigris which he had held during the summer. Strategically, the British had the better situation. The Turks had withdrawn the bulk of their troops from the right bank of the Tigris, with the result that their line of communication was but an extension of the battle front. The British first objective now was Kut. By 13 Dec. 1916 the British opened their offensive; the troops were divided into two commands; one, under General Cobbe, was to hold the enemy to his positions on the left bank of the river and to picket the right bank as far as Es Sinn; the other, under General Marshall, with cavalry, was to secure and entrench a position on the Shatt-el-Hai by a surprise march. This program was duly carried out and Marshall gained control of the Hai waterway, threatened the enemy communications, and cut off another communication between the Turks in the Khadairi Bend, east of Kut, and those farther west. The next move was to capture that bend, lined with Turkish trenches, an operation that required two weeks of severe and mainly hand-to-hand fighting. Then followed two months of further hard fighting for the strong Turkish lines on both banks, and when these were captured Kut was almost surrounded, the Turks still holding fast at Sanna-i-Yat. The point of attack decided upon was Shumran, five miles above Kut. Some feint movements by British and Indian troops deceived the enemy, who hurried troops from Shumran to Sanna-i-Yat, and when the main attack was delivered on 23 Feb. 1917 the British crossed the river where it was 340 yards wide by means of three ferries and began building a bridge for the passage of troops. English and Gurkhas were employed in this enterprise under heavy fire. Meanwhile, General Cobbe, with Seaforth Highlanders and a Punjabi battalion was engaged in storming the Sanna-i-Yat lines, which fell to his men on the 24th, after they had cut their way through six lines of trenches. By the combined operations the Turks were completely outflanked; they evacuated Kut and retired on Bagdad. But this proved to be only the first stage in the British campaign. On the 26th the gunboats were 30 miles beyond Kut chasing the Turks; on 5 March British cavalry approached Bagdad; the Ctesiphon position was passed next day, and on the 7th the advanced force came into contact with the Turks along the Dialah River, a tributary of the Tigris, where the enemy made a stand before Bagdad, only eight miles away. By a rapid advance against determined resistance and a violent dust storm General Cobbe reached Bagdad railway station (10 March) on the right bank; Marshall on the left shore forced the Dialah and entered Bagdad on the 11th. In the afternoon the gunboat flotilla anchored off the British residency.

Bagdad, one of the oldest cities in the world, the city of romance, was lost to the Turks. The effect of its fall was far-reaching. While it restored British prestige it struck at Turkish pride and deprived Germany of a territory which, on account of the famous railway, played an important part in the Teutonic scheme of expansion. On 19 March General Maude issued a proclamation in Arabic to the people of the Bagdad vilayet, from which the following extracts are taken: "... Our armies do not come into your cities and lands as conquerors or enemies, but as liberators. ... For 200 years have the merchants of Bagdad and Great Britain traded together in mutual profit and friendship. On the other hand, the Germans and Turks, who have despoiled you and yours, have for 20 years made Bagdad the centre of power from which to assail the power of the British and the Allies of

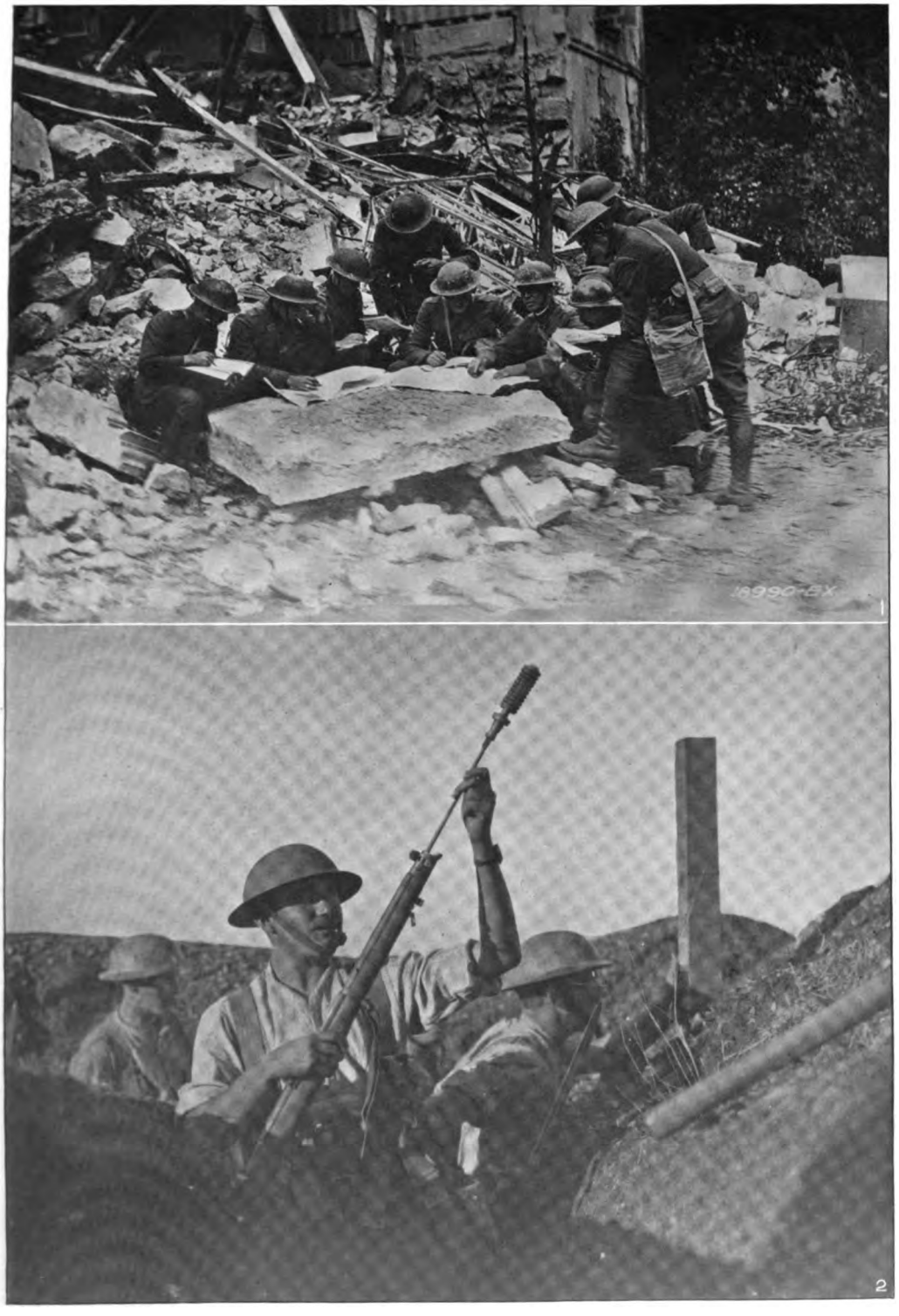
the British in Persia and Arabia. . . . But you people of Bagdad are not to understand that it is the wish of the British government to impose upon you alien institutions. . . . O people of Bagdad, remember that for twenty-six generations you have suffered under strange tyrants who have ever endeavored to set one Arab house against another in order that they might profit by your dissensions. This policy is abhorrent to Great Britain and her Allies, for there can be neither peace nor prosperity where there is enmity and misgovernment. Therefore I am commanded to invite you . . . to participate in the management of your civil affairs in collaboration with the political representatives of Great Britain who accompany the British Army, so that you may be united with your kinsmen in north, east, south and west in realizing the aspirations of your race."

Anglo-Indian cavalry continued to hunt the Turks from Bagdad along the road to Mosul, while another force was dispatched up the Dialah, driving the enemy toward Teheran, on the road from the north of which the Russians operating in Persia were pressing another Turkish force, which latter was now in peril of being caught between the two Allied armies, but the Turkish commander extricated his troops by skilful tactics. On 23 April the British column operating on the right bank was in Samarra. Between 24-30 April a Turkish counter-attack from Jebel Hamrin near the Persian frontier ended in disaster; the Turks were put to flight, pursued by British cavalry. A radius of 80 miles around Bagdad was now clear of the enemy; the city was safe from molestation and the wearied troops were permitted to rest. By 9 May the railroad was put in order and trains were running regularly over the 70 miles to Samarra, the terminus. The Turks were now obliged to withdraw their secondary force on the Euphrates, the situation there being no longer tenable after the fall of Bagdad. Since July 1915 they had been stationed about Samawa, 40 miles above Nasariyeh on the Euphrates, whence they now moved upstream to Ramadie, 28 miles north of Feluja and about 40 miles below Hit. A British column from Bagdad crossed the intervening country between the two rivers to Feluja and during July began to push along toward Ramadie. Owing to the excessive heat they postponed operations till September, when, on the 28th, they fell upon Ramadie with dramatic suddenness, circled the positions and caught the enemy in a trap. After a battle lasting a night and a day the Turkish commander, Ahmed Bey, surrendered with 145 unwounded officers and over 3,000 men, 23 guns and much other material. A month later a similar event occurred at Teskit, on the Tigris, 100 miles above Bagdad, where the Turks had established a base with a view to retaking Bagdad. This position was suddenly attacked on 2 Nov. 1917, when it was broken up and 2,300 prisoners captured. At the height of his great achievements General Maude died suddenly in Bagdad on 18 November and was succeeded by General Marshall.

We return now to the extreme eastern border of Egypt, where the Turks had been driven out of the Sinai Peninsula in February 1917. From this point the British started out to achieve a task that had been attempted so long ago as the 11th, 12th and 13th centuries — the reconquest of the Holy Land. The desert railway was being extended to Rafa and in March 1917 General Murray moved against the Turkish stronghold of Gaza, in Palestine. The latter is a country smaller than New Jersey, contiguous to the Mediterranean, 50 to 60 miles broad and 110 miles long. Geographically it is a part of Syria, from which it has never had a separate existence; except among Western Christians, its proper name in the East is "Syria" or its Oriental equivalents. The country, approaching it from Egypt, is difficult to traverse, changing from the Sinai desert to stony hills. Not caring to risk his army too far from the coast — being dependent upon seaborne supplies — General Murray decided to direct his main attack against Gaza, and to assist it by a diversion along the Wadi Ghuzze to cover his right flank. The enemy's plans, as it turned out, consisted of standing upon the defensive at Gaza and to throw his chief strength against the British right.

That plan was perfectly sound, for, even if the British did get into Gaza, they would not be able to hold the place should the Turks, on the right succeed in cutting between the invaders and their base at Rafa. Something like this actually happened. Murray attacked south of Gaza on 26 March; the Turkish defenses were stormed and the British entered the town, but the mobile column protecting Murray's right along the Wadi Ghuzze was hopelessly outnumbered and could not resist the full weight of the enemy thrown against it. Attacked both in flank and rear, the British perforce fell back, although they had taken 950 prisoners including the Turkish general in command and the entire staff of a Turkish division. The British casualties were about 4,000; those of the Turks nearly twice as many. Gaza remained in Turkish hands, and the enemy entrenched in a strong line from Gaza southeastward to Beersheba, about 30 miles. For the British it was a costly failure; yet they had mauled the Turks so severely that they, also, were unable to follow up their semi-victory. Nothing happened for the next three months. Meanwhile, General Murray had been recalled home and at the end of June his successor, Gen. Sir E. H. H. Allenby, arrived in Egypt. If Murray's task was difficult, that now facing Allenby was much more so, for in the interim the Turks had constructed six groups of formidable works on their Gaza-Beersheba line at parallel distances of 2,000 yards, provided with excellent lateral communications. On this front were now assembled some 180,000 troops with a good sprinkling of German officers, including one general, Kress von Kressenstein, who as colonel had taken part in the two abortive Suez Canal expeditions. The British force was strictly limited by the quantities of supplies and water that could be transported. The Turks, on their side, were well provided with water and railroad communications, connecting with Jaffa and Damascus, besides several light military railways.

Altogether, the prospects were not inviting; but even here, as in most human arrangements, there was a flaw and General Allenby discovered it. There was a gap of about four miles between the Beersheba defenses and those of



1 Regimental officers mapping enemy positions while under fire

2 British rifle grenade and trench periscope

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1 French and British artillery observers directing battery fire

2 Operating a daylight lamp-signal device in a shell-hole

Ruweika, a gap so rugged in conformation and so elevated that any artificial defense appeared superfluous. Instead, therefore, of attacking at the Gaza end of the line, Allenby decided to begin at the Beersheba end, where attack was least expected. In case of success in this sector and assuming sufficient speed of movement, there was a possibility of outflanking the enemy. It would have to be a surprise attack stealthily prepared. The preparations were matured during July, August and September. Great guns were brought across Sinai; a British squadron lay off the shore to co-operate in a feint attack on Gaza, while a picked force with six days' supplies was dispatched at night by a wide detour toward Beersheba. On 31 October all was ready for the grand assault. The bombardment of Gaza began on the 27th and kept up through the 29th; on the 30th the warships joined in. Meanwhile, the Beersheba force reached its destination, stormed the defenses and captured the town. Successive attacks were launched against Gaza on 1 November with tanks on the land side and bombardment from the warships. For a week the struggle raged, and on the 7th the Turks, after a gallant resistance, could hold out no longer and Gaza fell; the same evening British pursuers were nearly 10 miles beyond Gaza. From this stage the Turks were not allowed to rest. On 17 Nov. 1917 Joppa was captured and on 9 December the British were in Jerusalem. The Holy City fell for the 18th time in its long history. Though the Turks had fired from positions close to the city and from the Mount of Olives, no British gun was sighted within a considerable distance from the walls. Bethlehem had been occupied and passed the day before.

Two days after the surrender of Jerusalem General Allenby entered the ancient city on foot, accompanied by his staff, the commanding officers of the French and Italian detachments co-operating with the British forces and American, French and Italian military attachés. Martial law was proclaimed and the general announced that property and all sacred buildings would be protected. On 25 Jan. 1918 the War Office in London issued General Allenby's first dispatch, in which he stated that during the operations from 31 Oct. 1917 to 9 Dec. 1917 over 12,000 prisoners were taken, while among the mass of war material captured there were about 100 guns, many machine guns, 20,000,000 rounds of rifle ammunition and 250,000 rounds of gun ammunition. More than 20 aeroplanes had been destroyed by British airmen or burnt by the enemy to avoid capture. Both from a political and military view the British occupation of Jerusalem was a most important event, for it still further reduced Turkish prestige and exercised a profound influence upon the greater part of the Christian world. Nor was the prospect of losing so important a place underrated on the enemy side, for as soon as Jerusalem was reported to be in danger, frantic efforts were made to save it. Enver Pasha came post haste from Constantinople and lectured the Turkish commanders, while the German strategist Falkenhayn hurriedly covered the 300 miles from Aleppo to the front, but found that he was unable to stave off the inevitable. An Arab prophecy had been current for centuries that a deliverer would come to Jerusalem from the West. There had been considerable speculation in the country in 1898 when the former kaiser visited the city, but the wise expounders of The Law had asserted that the real saviour would bear a prophet's name and would enter on foot. In the minds of the peasantry of Judæa General Allenby fulfilled these conditions, for by a peculiar coincidence his name somewhat resembles the Arabic for "the prophet," which is "al nebbi." Colloquial Arabic being a very elastic language, "Allenby" and "Alneby" may easily become synonymons terms.

The retreating Turkish army had been cut in two sections by the rapid British advance along the coast and the dash between Joppa (modern Jaffa) and Jerusalem. One force was only a few miles north of Joppa; the other held a line across the roads leading from Jericho east of Jerusalem to Nablus, about midway between the River Jordan and the Mediterranean. The British line stretched from Jerusalem northwestward to Jaffa, taking up roughly half of the territory between the Dead Sea and the Mediterranean. It was essential first to protect that line and push it forward, involving an advance on a 12-mile front to a depth of six miles, by which the distance between Joppa and the enemy would be increased to eight miles. But before this movement could be carried out a great deal of labor had to be expended on improving the roads and in bringing up fresh supplies from Egypt. These latter were transported over the railroad which had been laid down behind the advancing force; in other words, the iron road followed the army. Heavy rains now turned the roads into quagmires and movement was slow and difficult. The Turks launched several attacks on the Allied positions on the main motor road to Damascus. By degrees the front was pushed ahead; by 5 Jan. 1918 already 13 miles had been covered; the Turks had a base at Nablus (the ancient Shechem), about half-way on the road to Nazareth. Allied airmen bombed the base and behind it, causing much damage. Further progress was made in the middle of February, when the operation was expanded eastward toward Jericho and the Hedjaz Railway. During 1917 the allied Arabs had been operating successfully along that railway; under the leadership of the "mysterious" Colonel Lawrence they attacked and defeated a large Turkish force at Maan, 120 miles southeast of Gaza, on 7 July. About 700 Turks were reported killed, 650 captured and several guns taken. By this battle the Arabs gained control of a line from Maan to Akaba, the port at the head of the Gulf of Akaba, whence the Egyptian frontier line runs almost straight across Sinai to Rafa. East of the Jordan lay strong divisions of Turks, whose communications were continually harassed and pillaged by elusive bands of Arabs. Allenby began a drive eastward on a 15-mile front to the Jordan Valley, 19 Feb. 1918. battered down obstinate resistance and within two days a detachment of Australians rode into Jericho. The aim was to drive the enemy across the Jordan and to seize the crossings, in order to prevent them from raiding the country west of the Dead Sea. It was also desirable to gain a point of departure for operations eastward, to pass over north of the Dead Sea with a view to interrupting the Turkish line of communication to the Hedjaz, in conjunction with the Arab forces based on Akaba. Amman, a station on that railway, was

to be the first objective. The difficulty of the ground was a greater obstacle than the enemy's opposition, which appeared to weaken with the discouragement of frequent defeat. Of deadly machine-gun fire there was ample for the Allies to face; it was the cold steel assaults that inspired most respect. Aeroplanes scouted high over the Jordan Valley and the shores of the Dead Sea, dropping bombs on El Kerak, on the eastern side and on sections of the railway. On 4 March Allenby's left moved northward on Shechem, where a big tributary of the Jordan, Wadi Auja, lay in the way. The rocky defiles of the Robbers' Valley concealed numerous machine-gun nests. After storming the height of Tel Asur British troops crossed the Wadi Auja on the 9th while the foothills overlooking the Plain of Sharon and along the coast were partially cleared. On the banks of the Jordan a two weeks' fight for the Ghoraniyeh bridge ended by the Turks blowing it up. Allied engineers threw bridges across the river and toward the end of the month a sudden raid was made through the mountainous region on the east upon Es Salt, which was strongly held by Germans and Turks. Many of the troops had to swim across the Jordan in the night at certain parts of the river, while some were able to use the bridges in face of fire and a strong current. Es Salt was found to be evacuated on 25 March; Australians and New Zealanders advanced beyond and reached the railway line, where they were able to carry out some demolition before enemy reinforcements compelled their withdrawal back to the Jordan.

Except for a garrison left on the east bank to hold a bridgehead, all the Allies were back across the Jordan by 2 April. The Turks now returned from the east and reoccupied a strong position at Shunet Nimrin with some 5,000 men, about 10 miles from the river. An attempt was made to cut off this force by a roundabout movement to the north of it, to retake Es Salt and hold it if possible till Feisul with his Arabs could come up from the south. The Arabs, as already stated, had their base at Akabah. In January 1918 they had captured the high ground about Uheida, within seven miles of Maan; while another Arab force had seized the whole of the Hish Forest up to and including Shobek, 20 miles north by west of Maan, and destroyed some 22 miles of the enemy's light railway, along which they had transported wood for their locomotives. Still another Arab patrol raided Jauf ed Derwish, a station 30 miles north of Maan, which they held for three days, during which they burnt the building and destroyed some rolling stock. In these operations the Turks lost a number of killed, prisoners and guns. Another band of Arabs captured Tafile at the south end of the Dead Sea in January, where the Turks surrendered. On 26 January a strong Turkish force attempted to recapture Tafile, but was driven back with severe loss, over 450 killed and 300 taken prisoners. In March they returned, accompanied by German infantry, when the Arabs retired

The raid on the Shunet Nimrin position commenced in the morning of 30 April; the advanced works were captured, but a strong resistance rendered it impossible to go farther for the moment; the cavalry sent round north of the place arrived at their destination and took Es Salt, where an Australian brigade was left This body was attacked and separated by Turkish cavalry on 1 May and one section was driven back through the foothills to the Wadi el Abiad, abandoning nine guns and part of their transport. Those of the Australians left in Es Salt were now cut off with but one line of retreat or supply till the main road could be opened by the capture of Shunet Nimrin. A combined Allied attack on this position began on 2 May, but at the same time two Turkish battalions with heavy guns arrived at Es Salt and made a desperate attempt to overcome the Australians there, though without success. To ward off this blow the force for Shunet Nimrin had to be weakened and called off, as Turkish reinforcements were approaching. Arab assistance had been expected, but it did not materialize in time. The Australians withdrew from Es Salt, closely followed by the enemy, who, however, was held off without difficulty and all the Allies got safely back over the Jordan by 4 May. Meanwhile, great events were preparing on the Western Front for the last mighty effort, and troops were collected from every available theatre of war to assist in striking the final blow. Little as they could be spared, men were sent from Syria to France; the reorganization of the forces prevented further operations on any large scale beyond a policy of active defense. Divisions were withdrawn from Palestine and Mesopotamia, also nine Yeomanry regiments, five siege batteries, 10 British battalions and five machine-gun companies: all embarked for France. These were replaced by Indian cavalry regiments from France and native battalions from India. During May, 14 British battalions more were withdrawn for France, with only two Indian battalions to replace them. During June, July and August more men arrived from India. While all this shifting had been going on, the enemy had not been neglected; many raids took place. But the Turks had received a considerable "stiffening" of German troops, and their resistance grew stronger by degrees. Advance was made on the British left along the coast in June in a series of minor battles and daring raids. The Indian troops were admirably adapted for this style of warfare, Pathans, Sikhs and Gurkhas particularly distinguished themselves in stealthy approach and sudden pouncing upon the enemy lines. During the summer an event of considerable importance had happened far behind the Palestine front: an iron swing bridge across the Suez Canal had been completed at Al Kantara (Arab, "the bridge"), thus establishing direct railway communication between Cairo and Palestine — for the first time. This very modern link between the land of the Pharaohs and Judæa facilitated rapid transport of supplies to the fighting line. On 27 May 1918 the last tremendous German offensive began in France; the Germans were at the height of their great sweep toward Paris when, on 13 July, the Turks emulated the example of their allies by making a most determined attempt to rush the Jordan crossings and recover Jericho. They made some progress at first, but on the next day the Australians counter-attacked and restored the position, capturing many Germans including 12 officers and a number of guns. A strong Turkish force concentrated on the east of the Jordan was surprised in a dashing charge

by the Jodhpur (Indian) Lancers and sought safety in flight.

During all this period the Arab allies were busy harassing the Turks along the Hedjaz Railway, not permitting the latter to restore communication between Maan and the north. South of Mann a detachment of the Imperial Camel Corps attacked and captured the station at Kalaat el Mudawara, destroying the water tower and pumps, with the result that no water was now to be had for a distance of nearly 100 miles south of Maan; Medina was definitely cut off from the north. Since the declaration of their independence the Arabs had cleared the Red Sea coast of the enemy for 800 miles and disposed of 40,000 Turkish troops.

In order to keep the narrative abreast with the events, we must now direct our glance to Mesopotamia, where we left the British in possession of Bagdad under the command of the new generalissimo, Sir W. R. Marshall. If one will consult a map of the quondam Turkish Empire and observe the relative positions of Bagdad and Jerusalem, the whole strategy of the two commanders is at once apparent. They are working along on parallel lines with the Great Nefud or Arabian Desert stretched between them. Follow the two lines upon the map and it will be seen at once that the junction where the two armies — provided they are successful — must eventually meet is the ancient city of Aleppo, outside the northern rim of the desert. The last important action under General Maude was the surprise and capture of Ramadie on 28 Sept. 1917. The Anglo-Indian force which accomplished this exploit was opposed early in October by other Turkish forces northeast of Ramadie on the Jebel Hamrin hills on the Euphrates side of Mesopotamia. On the Tigris side of the country the enemy was entrenched up the river above Bagdad in front of Daur, his left wing stretching across to Ramadie. Marshall was sent to expel the Turks from their forward position on the right bank of the Diala and to hold them in front while a main attack was delivered against their left flank. The plan succeeded; the enemy was dislodged from a very strong position, but, owing to the low water of the Diala at the time, most of the Turks made their escape and got over to the right bank. In the middle of October a Turkish army corps undertook a counter-demonstration, advanced eight miles north of Samarra and entrenched. These operations, begun under General Maude, were continued by Marshall toward the end of November, when the Diala was forced by night and the whole position between Mirjana and the Nahrin occupied on 3 Dec. 1917. An infantry brigade meanwhile advanced along the Jebel Hamrin and drove the enemy toward the Sakaltutan Pass and Nahrin River; another infantry brigade cleared Kishla Suhaniya, occupied the pass after the Turks withdrew in the night, and on 5 December a combined column pushed forward against Kara Tepe, carried the position next day and put the Turks to flight. Prisoners were taken and 100 dead were buried by the British. In this engagement a Russian detachment co-operated. Khanakin was occupied by the Allies on 9 December, and the next two months were mainly devoted to consolidating positions and constructing bridges across the Euphrates, to which side of Mesopotamia the next main attack was to be transferred. On 9 March 1918 a surprise assault on Hit, in the centre of the oil country, was entirely successful, while a dashing cavalry coup netted 3,000 prisoners. The next place to fall was Khan Bagdadie, some 22 miles northwest of Hit; pursuit was kept up till the rains intervened; by the first week of April over 5,000 prisoners were taken. At the end of the month the advance was resumed up the road to Mosul. The Allies were now half-way between Bagdad and their goal at Aleppo. The Turks kept on the move, harassed by cavalry which swept up large numbers of prisoners. Numerous minor operations were in progress during all the time.

German emissaries were busy stirring up certain tribes on the Persian border with gold and promises, notably some sections of the Sinjabis. With the assistance of some friendly tribes a small British column fought a brief action with the Sinjabis, defeating them with heavy loss (25 April 1918). The result of this little battle was useful, for the pro-enemy chief of the Sinjabis (who was known to be in German pay) was himself wounded. The German agents fell into discredit; a profound impression in favor of the British was created among the surrounding tribes, and the line of communication into Persia was safeguarded from serious raiding.

Little by little the Mesopotamian columns pushed ahead, fighting many engagements, dislodging the enemy from inconvenient positions and securing control of roads, rivers, ravines and natural fastnesses. Substantial gains were made during May along both the Tigris and Euphrates, while Allenby was slowly forging ahead on the other side of the desert. Each commander met with checks and minor reverses; wherever an effort failed, a repeated attempt rarely proved unsuccessful. All strategic movements were but preliminaries to the great decision. As the Allies advanced, the Turks time and again retired after an engagement or evacuated positions without excessive resistance. In this manner various places were occupied by the Allies. To add to the difficulties famine stalked among the civilian populations on the route, necessitating a combined campaign of fighting with the enemy and alleviating suffering. Cleaning up indescribably dirty towns and introducing the elements of sanitation was yet another of the many tasks to be faced. It must be remembered that during the summer of 1918 there were still some Russian troops in Persia who had not yet shared the general demoralization of their brethren in Europe. Persia was relapsing into anarchy and the Russians were retreating to the Caspian. Urgent calls came to Marshall to send troops into the country, where famine also prevailed. Mr. and Mrs. Stead, two American missionaries, were engaged in strenuous relief work in the neighborhood of Kermanshah. At the end of May General Marshall dispatched troops in automobiles as far as Kasvin to take over that place from the retreating Russians. Though a mere side issue, this was an operation of considerable difficulty and magnitude. The Allied mission under General Dunsterville arrived at Kasvin on 1 June 1918; on the 8th the Russians stationed there marched away for Enzeli to take ship thence for Baku. A small British detachment accompanied them. On reaching Mandjil three days

later they found the bridge at that place held by a native tribe called the Jangalis, with whom were several German officers. After a vain effort to parley on the part of the Germans, the Russians attacked assisted by British light armored cars, captured the bridge, and moved on to Resht and Enzeli. During July some street fighting occurred in Resht when a small detachment of Anglo-Indian troops were attacked by the Jangalis. About 100 of the latter were killed, when the tribe made an agreement not to assist the Turks any further. At this time the government of Baku (on the Caspian) was Bolshevik, and strongly opposed to British intervention. Actions were fought near the port between Turks and Tatars on one side and Russians and Armenians on the other. On 26 July the Bolshevik government was overthrown and its place taken by a Centro-Caspian Dictatorship. The latter at once applied to the British for aid, but before it could arrive the Russian commander who had brought his men out of Persia had marched them away again along the Caspian. On 4 August a small mission of British officers with one platoon as escort arrived at Baku, where they received an ovation on marching through the town. The Turks attacked Baku the next day and were driven back with many losses. More British reinforcements continued to trickle into the town and took over portions of the defenses. General Dunsterville tried to rouse the population into an energetic mood, but they seemed to think it was no longer necessary for them to fight now that the British had come. Twice toward the end of August the Turks attacked Baku with artillery and bayonet charges, opposed at first only by a handful of British troops and Armenian irregulars. On 14 September the Turks returned to the attack with considerable reinforcements. They scaled the heights and had nearly succeeded in taking the town when a counter-attack by Russians, British and Armenians held the fort for a while; the Russians lost all their officers and the Armenians were overcome. The weak British force could do little more, so it was decided to withdraw them on three vessels which had been earmarked for their use. The town was at the mercy of the enemy, who occupied all the high ground and could shell the harbor at 3,000 to 5,000 yards. The Baku government was informed of General Dunsterville's decision; the sick and wounded were carried on board in the evening and at 10 o'clock the three ships set sail without lights closely followed by another in which it had been possible to collect ammunition and explosives. This latter vessel was struck by gunfire from the guardship at the mouth of the harbor, but the others slipped away unscathed, and all four arrived safely at Enzeli. The British detachment had held the Turks out of Baku for six weeks; the latter were obliged to bring up large reinforcements before they could capture the place.

We must now cast a brief glance over Northern Persia. The Turks entered Tabriz on 16 June 1918. During June, also, about the time Dunsterville was leading his detachment into Persia, small bodies of troops were dispatched to Bijar and Miana to safeguard the long line of communication and to establish friendly relations with the local tribes in the northeastern corner of the country. A road runs through Bijar to the Urmiah district, where it was known that the Assyrians, Nestorians and Jelus had been successfully resisting the Turks during the early summer. In July it was decided to get into communication with these tribes by aeroplane, and to send them by convoy assistance in the shape of ammunition, machine guns and money. This convoy reached Sain Kala on 23 July, but the Assyrians were 10 days late in meeting it, and their eventual arrival coincided with the occupation of Urmiah by the Turks, who drove all the Assyrians out, massacring many and pursuing them along the road to Sain Kala until checked by the British advanced troops. The whole of the Assyrians who survived — men, women and children — then streamed along the Sain Kala-Bijar road from 3 August onwards, and finally over 50,000 arrived at Bijar, whence they were evacuated unmolested to Hamadan. Large numbers fell by the way from privation and cholera. The British military authorities fed the refugees and sent them on in batches of 3,000 at a time down the Persian line of communication to Bakuba, where a great refugee camp had been formed. Men capable of bearing arms were organized into a fighting force, and others were employed on the roads and elsewhere. A small British detachment had also been kept at Miana, on the Kasvin-Tabriz road, and on 1 August news was received that the Turks in Tabriz were collecting transport, apparently with the aim of raiding the British communications, then held by weak parties of troops. The Turks eventually attacked an advanced post of irregulars on the road about 45 miles northwest of Miana, and for several days the posts had to fall back fighting against superior forces of Turks, who occupied Miana on 9 September, taking up a strong position south of that place. Meanwhile General Marshall had sent such reinforcements as he could spare, and the Turkish advance was brought to a halt.

Mention has been made of the situation of the Turkish Armenians in the war. We have seen how the two branches of that race were willing to pledge loyalty to their respective governments, Turkish and Russian. They fought in both armies, and were betrayed by both governments; for, under the Turks, they were rarely entrusted with weapons, but were made to perform all the menial tasks of the camp and battlefield. After the downfall of the Romanoffs, the Russian Armenians supported first the Provisional and then the Kerensky government, in the despairing hope that some measure of benefit might accrue to their unhappy country. When Kerensky went down before the Bolshevik avalanche, the Russian Armenians made common cause with their brethren under Turkish rule. For a month the Armenians at Van held a Turkish army at bay during April 1915, keeping a division of the enemy and thousands of Kurds employed; two months later, some 10,000 Armenians of Sassun, armed with obsolete weapons, fought 50,000 Turks and Kurds. On neither occasion did the Russians, who were within easy distance, come to the rescue. Armenian men and women occupied the trenches and fought with the courage of despair at Urfa for 40 days against a

Turkish division. Later, in Cilicia, a few thousand Armenians near Zeitun fled into the mountains and struggled against an army of Turks for over 40 days. They managed to reach the Mediterranean Coast, whence they were picked up by a French cruiser, which conveyed them to Egypt, where they enlisted in the British and French armies. In the Caucasus the Armenians contributed in no small measure to the defeat of the Turks in the early stage of the war and still more in the later part of the campaign. After the Turks had surrendered, General Liman von Sanders expressed the opinion that their collapse was due to the fact that the Turks, "against my orders and advice, sent all their available forces to the Caucasus and Persia, where they fought the Armenians." Kerensky said on 20 Aug. 1918 that, "of all the races of the Caucasus, the Armenians alone stuck to their posts, organized volunteer forces and by the side of their Russian comrades faced the formidable assaults of the enemy and turned his victorious march into a disastrous rout." During the war the Turks launched five separate offensives in the Caucasus; four of these were defeated mainly by the Armenians, and in the other case the Russians who were chiefly responsible for victory were commanded by an Armenian general, Nazarbekoff. On 3 Oct. 1918 Lord Robert Cecil wrote that "the service rendered by the Armenians to the common cause can never be forgotten." After the Russian Caucasus Army of over 200,000 men abandoned the country they left 30,000 Armenians facing nearly 70,000 Turks. An arrangement between the Caucasian Armenians, Georgians and Tatars lasted only a few weeks, for in May 1918 all the three races declared their respective territories as independent republics. The Armenians, however, were soon called to fight for their independence, for the Turks sent large armies against them. In two fierce encounters the latter were routed with enormous losses and were glad to negotiate for peace, the preliminaries of which were signed on 4 June 1918. This treaty was not ratified by the new republic, born out of bloodshed, rapine and centuries of oppression.

The multifarious fighting, skirmishing and manœuvring for positions that took place during the summer of 1918 have been touched upon; they form the overture to the sensational drama that was shortly to be enacted. Three years before there had been a subsidiary operation on the banks of the Suez Canal and an unheralded landing at the head of the Persian Gulf. Against innumerable difficulties and in the face of numerous setbacks, the Allies had slowly crept across the Sinai Peninsula and up along the Syrian Coast on the one part, and up along the banks of the Tigris and the Euphrates on the other. Like an insidious fatal disease which begins from the feet and relentlessly works its course up to the heart, so the British and Allied detachments had gradually worked upwards from the lower extremities of a diseased and decrepit polity, laming its members to the trunk. The *coup de grâce* was now to be dealt swiftly and mercilessly. "The Last Crusade," as Mr. John Buchan terms it, "was now approaching its climax, and the Crusaders would have startled the souls of Saint Louis and Raymond and Richard the Lionhearted could they have beheld that amazing army." Only a modest portion of it was drawn from the Western peoples. Algerian and Indian Moslems, Arab tribesmen, men of the thousand creeds of Hindustan, African negroes, Frenchmen, Italians, Armenians, Americans and Jewish battalions all united for a common purpose, were among the liberators of the Holy Land of Christendom.

In Syria the Turkish army, under Liman von Sanders, a German, held a line from the north of Joppa on the coast right across Syria, over the Jordan, and down its eastern bank to the Dead Sea. Some distance east of that line, near Maan, were the Arabs under the Shereef Feisul; they were to play a certain part in the coming offensive. The enemy's total strength was estimated by General Allenby at 4,000 sabres, 32,000 rifles and 400 guns; the garrison at Maan and the posts on the Hedjaz Railway north of it consisted of some 6,000 rifles and 30 guns; his general reserve of only 3,000 rifles with 30 guns was scattered between Tiberias, Nazareth and Haifa; the total ration strength amounted to about 104,000. Allenby had at his disposal two cavalry divisions, two mounted divisions, seven infantry divisions, one Indian infantry brigade, four unallotted battalions, and a French detachment equal to an infantry brigade, making a total in the fighting line, of some 12,000 sabres, 57,000 rifles and 540 guns — a superiority in numbers over the enemy, especially in mounted troops. The main attack, which opened on 19 Sept. 1918, was preceded by a minor thrust up the road between Jericho to El Mugheir, where this highway meets a track from Shechem to the Jordan crossing at Jisr ed Damieh, which crossing enabled the enemy to transfer troops from the west to the east bank at pleasure and interrupt the communications of a force in the hills of Moab. All the enemy's communications to Damascus ran northward converging some 25 miles upon El Afule and Beisan, which, with Deraa, were the vital points to be struck at. Deraa was beyond Allenby's reach, but not beyond that of the mobile Arab army, which was in a position to dislocate all traffic. El Afule, in the plain of Esdraelon, and Beisan, in the Valley of Jezreel, were within reach of Allenby's cavalry if his infantry could break through the defensive systems and make a gap for the cavalry to rush through. It was essential that this gap should be created at the beginning of the operations in order that the cavalry might reach their destinations, 45 and 60 miles distant, before the enemy could make his escape. Moreover, whichever route the cavalry followed, the hills of Samaria, or their extension toward Mount Carmel, had to be crossed before the plain of Esdraelon and the Valley of Jezreel could be reached; and it was most important that the enemy should not be given time to man the passes. For this reason Allenby decided to make his main attack in the coastal plain rather than through the hills north of Jerusalem, where the ground afforded the enemy positions of great natural strength. A rapid and decisive advance was necessary, hence the route along the coast would enable the cavalry to pass through the hills of Samaria into the plain of Esdraelon at their narrowest point, thus ensuring greater speed and less likelihood of being checked.

The Turks had constructed two defensive

systems on a 10-mile front along the coastal plain at Jiljulieh, the ancient Gilgal. The first, 14,000 yards in length and 3,000 yards deep, ran along a sandy ridge in a northwesterly direction from Bir Adas to the sea, and consisted of a series of works connected by continuous fire trenches. The second, or Et Tireh system, 3,000 yards in the rear, ran from the village of that name to the mouth of the Nahr Falik. The ground on the enemy's extreme right was marshy and could be crossed only in few places. The terrain between the Allied front line and the Turkish defenses was open and could be overlooked from the enemy's works on the foothills round Kefr Kasim. By reducing the strength of his forces in the Jordan Valley and withdrawing his reserves from the hills north of Jerusalem, General Allenby concentrated five divisions and the French detachment, with 383 guns, for the attack on these defenses. In addition, two cavalry and one Australian mounted divisions were available for this front. Altogether the Allied strength on the front of attack represented 35,000 rifles against 8,000, and 383 guns against 130.

In order to prevent the Turks from discovering the decrease in strength in the Jordan Valley, a series of demonstrations were carried out in that region by Australian, New Zealand, Indian and English troops to induce the enemy to believe that an atttack was coming east of the Jordan, either in the direction of Madeba or Amman. A mobile column of the Arab army was meanwhile assembling at Kasr el Azrak, 50 miles east of Amman, accompanied by British armored cars and a French mountain battery. The real objective of this column was the railway north, south and west of Deraa. It was hoped that the demonstrations just referred to would enable the Arab concentration to pass unobserved. The concentration on the front of attack was carried out by night, and every precaution was taken to prevent any increased movement becoming apparent to the enemy. The many groves round Ramleh, Ludd and Joppa were utilized to conceal troops during the daytime, though the chief factor in the secrecy maintained was the supremacy in the air which had been won by the Royal Air Force by continual wearing down of the enemy's aircraft throughout the summer. During one week in June 100 hostile aeroplanes had crossed the Allied lines; during the last week in August the number had decreased to 18. Several were shot down within the next few days, with the result that only four machines ventured to cross the line during the period of concentration. While the concentration was nearing completion the enemy's railway communications at Deraa were attacked by the Royal Air Force and by the Arab army, which had moved into the Hauran. The line and station buildings were damaged on 16 and 17 September; on the 16th the Arabs, who had been joined by several local tribes and some Druses, destroyed a bridge and a section of the line; on the next day extensive demolitions were carried out north and west of Deraa, thus cutting off all through traffic to Palestine. On the morning of 18 September all was ready for the stroke. During the night one corps swung forward its right on the east of the Bireh-Nablus road and a division captured El Mugheir with stern hand-to-hand fighting. At 4:30 in the morning of 19 Sept. 1918 the artillery in the coastal plain opened an intense bombardment lasting 15 minutes, under cover of which the infantry left their positions of deployment. Two torpedo-boat destroyers assisted, shelling the coastal road to the north, clearing the way for the cavalry. The blow fell with such force that the Turkish line was completely broken in about four hours' fighting; the level plain helped to a rapid advance while the naval guns swept the roads. So swift and complete was the Turkish demoralization that the infantry was able, after marching five miles, to swing eastward at the railway junction and advanced base of Tul Keram, and capture it. In this direction disorganized bodies of the enemy were streaming in wild flight, pursued by the 60th division and the Australian Light Horse, with a composite regiment of Chasseurs d'Afrique and Spahis (Sepoys) attached. Turkish troops, guns, motor lorries and transports of every description were struggling to escape along the road leading to Messudie and Nablus. The confusion was added to by the persistent attacks of the English and Australian flying corps, which wrought great havoc. The British infantry covered 12 miles in half a day; through the broken line of the coast flying columns of cavalry passed to complete the rout and round up the surprised enemy. The Desert Mounted Corps crossed the hills of Samaria, entered the plain of Esdraelon at El Lejjun, seized El Afule and sent a detachment to Nazareth, the site of the Yilderim Headquarters. Sufficient troops were left at El Afule to intercept the Turkish retreat there, while the remainder of the corps rode down the Valley of Jezreel and seized Beisan. Another corps rode along the line Hableh-Tul Keram, through the hills and converged on Samaria and Attaro, sweeping the retreating Turks into the arms of the cavalry left at El Afule. This last-named place, south of Nazareth, contains the junction of the line from the port of Haifa connecting with the Jerusalem Railway. The Australian Light Horse had already cut the line at Anebka, west of Samaria. The whole region was thus surrounded; on the second day (20 September) no fewer than 18,000 prisoners, 120 guns, four aeroplanes and a large mass of war material and rolling stock fell to the victors. The scattered remnants of the Turkish army were endeavoring to cross the Jordan fords in the small section open to them, but were almost without roads to reach them. Those which fled north before the advancing infantry were rapidly gathered in by the cavalry, who had established themselves in Nazareth and Beisan by 20 September. The northward roads from Jericho and Jerusalem meet at Beisan, together with two others from the city of Samaria and from across the Jordan. The cavalry racing down the Samaria highway reached and occupied Jenin, and thus blocked for the fleeing Turks another group of roads spreading fanwise toward the north. Other detachments pursued such bodies of the enemy as were struggling in the direction of Damascus as far as Tiberias, Semakh, and Es Samrah on the shores of the Sea of Galilee. When the British cavalry reached Nazareth, the site of the enemy headquarters, fighting developed in the streets and some 2,000 prisoners were taken.

General Liman von Sanders had already made his escape, but his papers and some of his staff were taken. The enemy resistance was broken on 20 September; on the 21st the Turkish rearguards were driven in. On the 22d the New Zealand Mounted Rifles and the British West Indies Battalions seized the bridge at Jisr ed Damieh, thus cutting off all hope of escape for the enemy in that direction. Early in the morning parties of Turks, numbering from 50 to 300, began to approach Beisan, preceded by white flags. On the 24th the 20th Cavalry Corps met with occasional opposition, and its advance was hampered by large numbers of Turks who surrendered. Great quantities of transport and numerous guns were found abandoned by the roadsides. On a five-mile stretch of road 87 guns, 55 motor trucks and 842 vehicles were found. Part of the garrison of Haifa, which was attempting to reach Tiberias, was intercepted and attacked in moonlight by the 18th Lancers, who killed a large number and captured 300. While the Indian (Mysore) Lancers were clearing the rocky slopes of Mount Carmel the Jodhpur Lancers charged through the defiles and, riding over the enemy's machine guns, galloped into the town of Haifa, where a number of Turks were speared in the streets; 1,350 prisoners and 17 guns were taken. The small garrison of 150 men holding Acre attempted to escape, but was overtaken and captured. All the Turkish armies west of the Jordan had been accounted for and the terrain was cleared.

There yet remained the 4th Turkish army east of the Jordan, whose position was no longer tenable. By the morning of 23 September it was in full retreat on Es Salt and Amman, hotly pursued by the Anzacs and bombed from the air. The New Zealanders captured Es Salt and 380 prisoners; Amman fell on the 25th. Those of the Turks who retired northward along the Hedjaz Railway and the Pilgrim route were harassed by aeroplanes and the Arabs, who had occupied Maan on 23 September. On the 28th these Turks fell in with British patrols at Leban station, 10 miles south of Amman; escape was impossible, and on the 29th the Turkish commander surrendered with 5,000 men.

The road to Damascus, the next objective, was now open. The Desert Mounted Corps was dispatched in two columns on 25 September to occupy the city and intercept the retreat of the remnants of the 4th Turkish army. The Australian Light Horse captured Semakh, south of the Sea of Galilee, on 24 September after fierce hand-to-hand fighting; they occupied Tiberias the following day. Two days later cavalry started from Haifa and Acre for Nazareth, for the route now led northeastward to Damascus. By the evening of 30 September, after considerable fighting all along the road, the Australians had closed the exits from that city, which was entered on 1 October amid scenes of great enthusiasm. Throughout the drive on Damascus the Arab Camel Corps formed the extreme right of the Allied advance, and the Arabs were the first to enter the city. After the Turkish and German troops in the city had been collected and guards had been posted, the British troops were withdrawn. The day before Damascus fell, the inhabitants were delighted to witness a brisk fight between Turks and Germans, provoked by excessive German demands for vehicles. Several were killed on both sides, and of many similar skirmishes between the Turks and their German allies evidence was forthcoming in the shape of numerous German corpses all along the line of retreat. One of the first acts of the Arab administration was to restore the electric lighting system in Damascus. This was in working order by the evening of 2 October, although the plant had been disused for weeks under the Turks. The street car service, stopped by the incapable Turkish administration in 1917, was resumed on 5 October. A further act was the removal, by order of the Arab commander-in-chief, of the bronze wreath which the German Emperor had imposed upon the tomb of Saladin in 1898. The senior descendant of Saladin, Shukri Pasha El Ayyubi, was appointed head of the Arab administration of Damascus. On 3 October the Shereef Feisul, commander-in-chief of King Hussein's northern army, arrived outside the old city which had once again passed into the power of his race. An automobile had been placed at his disposal, but Feisul, with a strong sense of the historical fitness of things, preferred to make his entry into Damascus much in the same way as did the Emirs of those Arabs who took Damascus in the 17th century, the Amorite Arabs who returned to it in the 19th century, the Aramean Arabs who set up their kingdom in Damascus in the 14th century B.C., Aretas, king of Arabia, when he occupied the city in 84 B.C., and Khalid Ibn Walid when he stormed part of the city from its Byzantine garrison in 634. Thus the Shereef Feisul, accompanied by some 1,500 of his kinsfolk and adherents, entered Damascus at full gallop and rode furiously through the streets to the accompaniment of a crackling *feu de joie* and shouts of victory, a thrilling exhibition of the typical Arab *la'ab el barud* or "powder play." This proceeding undoubtedly impressed the inhabitants with the reality of his arrival far more vividly than would have an orderly procession of numerous battalions following upon the unimpressive passage of high-powered automobiles.

French cavalry had meanwhile pressed on up the coast past ancient Tyre and Sidon to the Syrian port of Beirut. Tyre and Sidon enthusiastically received a division of Indian troops; they arrived at Beirut on 8 October, where they were warmly welcomed by the population, who handed over 660 Turks, including 60 officers. French and British warships entered the port on the 11th. Within a week Tripolis, the smaller port, had been captured together with its railway junction town, Homs. Baalbek was occupied by an armored car section on the 9th and took over 500 Turks who had surrendered to the inhabitants. From Homs the pursuit continued toward Aleppo, where some 20,000 Turks and Germans were reported. The 5th cavalry division and the armored car batteries were sent ahead, starting out on 20 October. On the night of the 26th the Turkish rearguard withdrew to a position near Deir el Jemel 20 miles northwest of Aleppo. By this time the Allies had advanced over 300 miles since the 19th of September, had taken 75,000 prisoners, including 200 officers and 3,500 men of German or Austrian nationality. About 360 guns had been captured, over 800 machine guns, 210 motor trucks, 44 automobiles, 3,500

animals, 89 railway locomotives and 468 carriages and trucks. The operations had extended over an area of 2,500 square miles. Aleppo fell on 26 October with little resistance. The much-prized railway line which was to link Germany with the Persian Gulf was cut and in the hands of the Allies; the German commander of the Turkish armies in Syria had fled.

Things had meanwhile not prospered in the Turkish capital. Sultan Mohammed V had died on 3 July 1918 and had been succeeded by Wahid-ed-Din. The new ruler appeared to exercise more authority than his predecessor had been able to exert. Enver Pasha and Talaat Bey, the leading spirits of the Committee of Union and Progress, were at loggerheads and blaming each other for the country's misfortunes which neither could avert. German prospects of victory were vanishing in the West, while the blows administered in Syria and Mesopotamia were shaking the foundations of the Empire. Enver and Talaat both resigned on 10 October when their case was palpably hopeless and it became necessary to secure their own safety before the approaching storm. A new cabinet was formed, but the situation was too serious to be restored by reshuffling the cards. The Turkish government appealed to President Wilson on 14 October to use his influence to secure a much-needed armistice. No answer was forthcoming.

For the last act of the drama we must again turn to Mesopotamia, where little had happened during the summer beyond the work of preparation and consolidation accompanied by occasional fighting. In this theatre of war an interesting side-light on the British character is afforded in General Marshall's Dispatch of 1 Oct. 1918: "The manufacture of prepared bitumen and lime continues at Hit [captured 9 March] on a large scale. Some 4,000 tons of bitumen and 5,350 tons of lime have been exported during the last four months, and it has been found possible, after meeting all government demands, to allow of private enterprise in this industry. . . . uninterrupted progress has been made in the opening up and development of the country. . . ." While Allenby was advancing on Aleppo, Marshall began to move in Mesopotamia. Operations were begun on 24 October with an attack on the strong Turkish position at Fathah, where the Tigris flows through the Jebel Hamrin. This was carried by Indian divisions on both banks of the river. By a ride of over 50 miles the 11th Indian Cavalry Brigade forced a crossing over the Lesser Zab in face of opposition, and by a further ride of over 50 miles got right around the Turks and astride their lines of communication at Hurwaish, where they were joined by an armored car brigade. Out-manœuvred on the east bank and driven back on the west bank the Turks fell back to their second line at the confluence of the lesser Zab, a position of great natural strength. On 25 October another Indian division also forced a crossing of the Lesser Zab and drove back to the west bank of the Tigris all Turks who were east of the river, while yet another Indian division closed up to the enemy who were now all on the west bank. Very severe fighting ensued; the hilly ground, indented with ravines and previously prepared for defense, was all in favor of the Turks, who fought with the greatest stubbornness. After continuous fighting the Turks were forced back on their third position on the hills covering Shergat, on the 27th. All that day Turkish reserves tried to break through the 11th Indian Cavalry Brigade, which barred the road to Mosul, but without success, though the arrival of enemy reinforcements compelled the brigade to draw back its right to cover its rear. On the night of 27–28 October two brigades of Indian cavalry and one of infantry held the enemy, and on the morning of the 28th the Shergat position was assailed. Though exhausted by their continuous fighting and marching through the rugged hills the Indians pushed forward and attacked until nightfall. The Turks were now fully hemmed in, and on the morning of the 30th General Ismail Hakki surrendered with his whole force, about 7,000 men. The victory was decisive; the enemy was broken in Mesopotamia as well as in Syria. Mosul, facing the ruins of ancient Nineveh, lay undefended, and Marshall entered it without opposition on 3 November. Toward the end of October General Townshend was liberated by the Turks and sent to inform Vice-Admiral Sir Somerset Gough-Calthorpe, in the Ægean, that they wished to open negotiations for peace. Townshend carried out his mission with the result that Turkey surrendered unconditionally to the Allies on 30 Oct. 1918. The armistice convention signed on that day provided for the opening of the Dardanelles and the Bosporus to the Allies; secure access to the Black Sea, and Allied occupation of all the forts lying along those two historic waterways. All Allied prisoners were to be collected in Constantinople and handed over unconditionally to the Allies. The Turkish army was to be immediately demobilized except for such troops as were required for the maintenance of internal order. All war vessels in Turkish waters were to be handed over and interned. The Allies were to have the right to occupy any strategic points if necessary. Allied ships were to be given free use of all ports and anchorages in Turkish occupation and the denial of their use to the enemy. Wireless, telegraph and cable stations were to be controlled by the Allies, Turkish government messages excepted. All railways were to be placed under Allied control. Turkey was required to surrender all garrisons in the Hedjaz, Assir, Yemen, Syria and Mesopotamia to the nearest Allied commander; all Turkish officers in Tripolitania and Cyrenaica to be surrendered to the nearest Italian garrison; while all Germans and Austrians, naval, military and civilian, were to be evacuated from the Turkish dominions within one month. Under these and a few minor conditions hostilities between the Allies and Turkey ceased at noon, local time, on Thursday, 31 Oct. 1918.

Little remains to be told. The war with Turkey ended with the complete and unquestioned triumph of sea power; the decisive factor was the hold of the Allied fleets on the Ægean and Eastern Mediterranean. The lesson is an old one—that he who commands the sea, commands Egypt, Palestine and Syria. Sea power permitted Maude, Allenby and Marshall to be supplied with men and material from India, where their transports and supply ships were beyond reach of the U-boats. After the failures at Gallipoli the operations against the Turks were directed toward Palestine and,

from the Persian Gulf, through Mesopotamia. The Turkish attempt upon Egypt was a feeble effort. Being deprived of sea communications, they only succeeded in bringing some 12,000 men up to the Suez Canal, an inadequate force that was easily repulsed. It was a different story when the British, having overcome the difficulties of the desert of Sinai by laying a railroad and a pipe-line bringing water from the Nile into Judæa, began an advance with their left flank supported by the naval forces of the Allies, and with the power of relying successively upon Gaza, Joppa, Haifa and Beirut as sea-bases. Had it been necessary, there was yet another port at their disposal further north, that of Alexandretta.

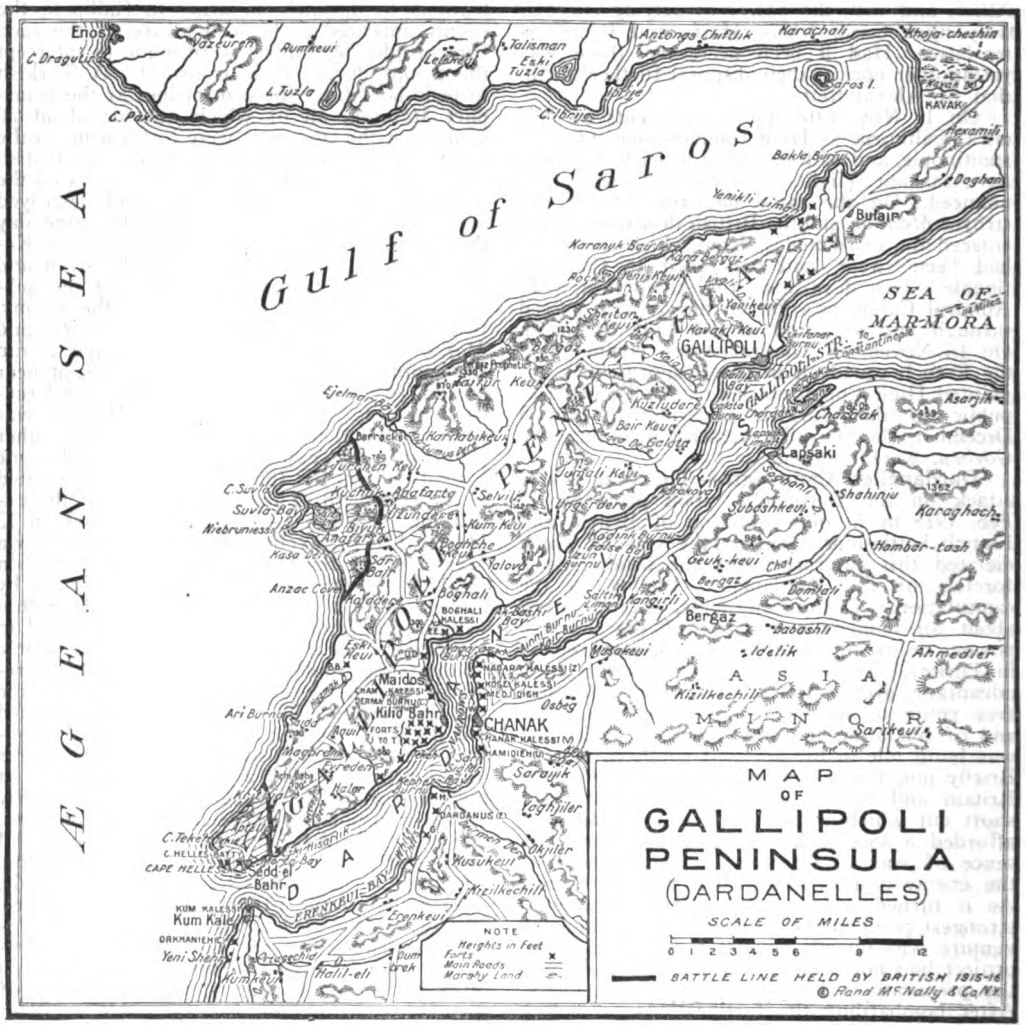
On 11 Nov. 1918 the appointments of Admiral Calthorpe as High Commissioner at Constantinople, and of Rear-Admiral Richard Webb as Assistant High Commissioner, were announced. On the same day the French destroyer *Mangini* and the British destroyer *Shark* entered the Dardanelles, from which the mines had been swept, and proceeded to Constantinople. Two days later, the Allied fleet, with Admiral Calthorpe's flag in the *Superb*, passed through and anchored in the Gulf of Ismid. On 18 November Admiral Amet, commanding the French squadron in the Bosporus, was appointed High Commissioner of the French Republic to the Turkish government. By 5 December the Turkish vessels, including the *Goeben*, were interned.

Dardanelles Campaign.— The first Allied attack on the Dardanelles took place on 19 Feb. 1915 by a joint squadron of British and French battleships. Among the reasons which dictated this enterprise was the belief that a forcing of the Dardanelles, leading to the capitulation of Constantinople, would bring about an immediate collapse of the Turkish power, or at any rate of the German régime in Turkey. There was, furthermore, the great advantage, given success, of reopening the ice-free route to Russia through the Black Sea and of liberating the huge stock of grain that was lying idle in the ports of southern Russia. Briefly put, the enterprise undertaken by Great Britain and France was an attempt to find a short cut which would at the same time have afforded a spectacular triumph. It is the essence of war to discover the weak point of the enemy and to attack that point in force. As it turned out, the Allies had chosen the strongest point in the Turkish defense, and the venture was in consequence a failure, for the project had not been carefully thought out and the preparations had been made in a hurry. After bombarding the fortifications protecting the straits for nearly two months it was decided that a naval attack alone could not hope to force a passage, and that troops would be necessary to obtain military command of both shores. Once that lesson was learned, preparations were undertaken for a combined naval and military attack. As it happened, the British had carried out a long-range bombardment of the forts at the entrance to the straits so early as 3 Nov. 1914, which committed no appreciable damage and only served to put the Turks on their guard. Between that day and 19 Feb. 1915 no further offensive operations were undertaken in this theatre of war beyond seizing the island of Tenedos. The Turks, therefore, had plenty of time with German aid to put the straits into a strong state of defense, if, indeed, they were not already in that condition before the war broke out. Even so, the Allies did not know in April 1915 how near they were to success; that the Turks had only a few shells left and were getting ready to evacuate the peninsula. The abortive naval attack is described elsewhere in this section under NAVAL OPERATIONS.

Though the Allies made a secret of their intentions to dispatch an army to Gallipoli, the enemy appeared to be well aware of the fact, for considerable efforts were made to intercept the troops during their transport. A Turkish torpedo-boat fired three torpedoes at the transport *Manitou*, all of which missed; about 50 men from the transport were lost, owing to the capsizing of a boat in the water, but the British cruiser *Minerva* and some destroyers chased the Turkish vessel, ran her ashore and destroyed her on the coast of Chios. On the same day the British submarine E-15 ran ashore on Kephez Point about 10 miles inside the strait and the crew were captured. To prevent the submarine from being of service to the enemy, two picket boats from H.M.S. *Triumph* and *Majestic*, manned by volunteer crews, ran the gauntlet of a very heavy fire and got near enough to the submarine to torpedo it and render it useless. The boat from the *Majestic* was sunk, but the crew were saved by the other boat, and the exploit ended with only one casualty. Gen. Sir Ian Hamilton was appointed to the command of the military part of the expedition. He left London with his staff on 13 March 1915; traveling in a special train via Marseilles he reached the base at Tenedos on the 17th, the day before a great naval attack by the entire fleet was to take place. Hamilton witnessed the bombardment and then cabled to London his "reluctant deduction" that the whole of the troops under his command would be required to enable the fleet effectively to force the Dardanelles. The British Cabinet accepted this decision. Hamilton had arrived at the conclusion, after sailing along the outward shores of the peninsula, that a landing was feasible at the extreme southern point. He ordered nearly all the transports to proceed to Egyptian ports, where he would be able to work out in detail their distribution for the projected landing. He was accompanied by General d'Amade, commander of the French expeditionary force. The generals were convinced that, while landing-places were few and difficult, it was essential to land at several of these at once, and to threaten to land at others, to act by way of surprise and to wait for favorable weather. The last consideration involved delay until near the end of April. During the afternoon of the 24th the troops which had then arrived at Tenedos were transferred to the warships and fleet sweepers, on which they were to approach the shore; they started off about midnight, the landing being planned to take place at five different spots early in the morning after a half-hour's bombardment by the warships.

The principal elements of warfare are personnel and geography — the men who do the fighting, and the place they have to fight in; everything depends upon these two factors. The British commander, whose biography appears elsewhere in these volumes, had served

with distinction for nearly 40 years in every British war and had been a spectator in the Russo-Japanese War of 1904–05. The French commander, General d'Amade, had had a distinguished military career in North Africa, Madagascar and Tonkin, and on the Western Front in 1914. The Turkish commander was the German Gen. Liman von Sanders, formerly chief of the Military Mission at Constantinople. He was appointed to the Dardanelles forces or 5th Army on 29 March. The Allied expedition, in the words of General Hamilton, was "drawn from all parts of the French Republic and of the British Empire." The bulk of the force was provided by Great Britain, for the French military authorities decided not to detach even a single division from the main theatre of war in order to take part in subsidiary operations. They had none too many men to guard the long Western Front, but they could draw upon forces not belonging to the regular army — the Fusiliers Marins, the Armée Coloniale and the Foreign Legion; these three bodies furnished the French expeditionary force. General Hamilton had under him as chief of staff Maj.-Gen. W. P. Braithwaite; Lieut.-Gen. Sir W. R. Birdwood who commanded the Australian and New Zealand Army Corps, the famous "Anzacs;" and Maj.-Gen. A. G. Hunter-Weston, in command of the nucleus of the force, 29th division, composed almost wholly of regulars. This latter comprised the 86th brigade of infantry — 2d Royal Fusiliers, 1st Lancashire Fusiliers, 1st Royal Munster Fusiliers and 1st Royal Dublin Fusiliers; the 87th brigade — the 2d South Wales Borderers, 1st King's Own Scottish Borderers, 1st Royal Inniskilling Fusiliers and 1st Border Regiment; the 88th brigade — 2d Hampshires, 4th Worcesters, 1st Essex and a territorial battalion, the 5th Royal Scots. The cavalry consisted of a squadron of the Surrey Yeomanry; the artillery included two batteries of the 4th (Highland) Mountain brigade. There were also two naval brigades and a brigade of Royal Marines. Within easy call, stationed in Egypt, there was a large number of experienced Indian troops and a Territorial division in



training. Altogether, the expeditionary force consisted of about 120,000 men.

The geographical difficulties to be overcome by an army attempting the conquest of the Gallipoli Peninsula are tremendous. Constantinople, "the queen city of the earth," has been endowed by nature not only with the most magnificent panorama of scenery in the world, but also with an impregnable bulwark against aggression from the west in the shape of the peninsula which guards the historic waterway known as the Dardanelles, the Hellespont of the ancients. From the sea the peninsula appears to rise abruptly out of the blue waters of the Ægean Sea. The Gallipoli shores are steep — though not high — bluffs, only broken here and there by ravines marking the beds of water courses. The peninsula is a tableland 52 miles long, varying in breadth from three miles to 12, and presents a sinuous shore line of over 150 miles. A limited number of small coves afford facilities for landing, but each of these coves is commanded from adjacent bluffs, in other words, controlled by gunfire. The only exception of any consequence is Suvla Bay, on the western side, where the shore is flat, but also overlooked by hills from both sides and from inland. The element of surprise was wholly eliminated, as any landing would have to be made in full view of the enemy and within reach of his guns. The country is a mass of rocky ridges rising to a height of over 700 feet from the sea; the hills are so steep and sharply cut that to reach their tops in many places is a matter of sheer climbing. There is little cultivation, only a few villages, and no properly constructed roads, while most of the land is covered with dense scrub from three to six feet high, with stunted forests in the hollows. Methods of communication are so primitive that the usual way from one village to another is not by land, but by boat along the inner or outer coast. There are two groups of forts. The first is at the entrance — on the north side, Cape Helles and Sedd-el-Bahr, with a few adjacent batteries; on the opposite shore, Kum Kale and Orkanieh. These forts were not heavily armed, for in any case they would be at a disadvantage against a long range attack from heavy battleships at sea. As a matter of fact, these forts were but the outposts of the real defense, and that was situated some 14 miles up the straits to where the width is less than a mile, and no great battleship could get so far as this without running considerable risk. Here, within a distance of a few miles there is a sharp double bend, from where guns command the whole water area and can also direct their fire end-on against vessels attempting to make the passage. This constricted part of the Dardanelles is called the Narrows, and around here lie the forts of Chanak or Sultanieh Kalessi, on the Asiatic side, and Kilid Bahr on the European shore, above which the slopes bristled with batteries commanding every angle of approach. Batteries lined both sides of the low ground from Chanak up to Nagara, both on the Asiatic side. In addition to the impossibility of a number of ships manœuvring in so small a compass, even if they got so far, there was the invisible danger of submarine mines, plus a number of torpedo tubes mounted in concealed positions, and a land torpedo is a more powerful missile than that discharged from a ship, while its aim can be more accurate. Furthermore, the descending current could be employed to carry drifting mines to meet the advancing fleet. Altogether, the Gallipoli Peninsula and the hill country on the Asiatic side presented two tremendous fortresses manned by powerful armies, estimated at no fewer than 200,000 men. The forts in the Narrows mounted 14-inch Krupp guns, a number of 11-inch guns, and lighter ordnance from six to nine-inch, while the outer forts had some 10.2-inch artillery, besides field howitzers. During the winter Krupp shells had been accumulated in Constantinople in preparation for the attack which the Turks expected. It would perhaps be more correct to say the Germans expected, for they were the directors of the Gallipoli defense. It was small wonder, then, that the Allied fleets found it a hopeless task to force a passage through the straits without the assistance of a land force, which must first overcome the interior forts and silence the batteries before vessels could penetrate even half-way into the Dardanelles. Mr. Henry Morgenthau, the American Ambassador in Constantinople at the time, has recorded the wild fear that prevailed in that city during January 1915 that the British navy might force the Dardanelles — even before the naval campaign of the Allies had begun. Both Turkish and German authorities confessed their belief to the Ambassador that the straits could be forced if the British were prepared to lose a few ships. According to Talaat Bey, the Turkish expedition to Egypt, which ended so ignominiously in failure, was undertaken merely to divert England from making an attack on the Dardanelles. In the middle of March, just before the close of the Anglo-French naval bombardment of the Gallipoli forts, all arrangements had been made in Constantinople to move the government, banks, archives, women and children over to Asia Minor; moreover, cans of petroleum had been placed to fire the city as soon as the British should appear in the Sea of Marmora, and a special point had been made of preparing to dynamite the famous mosque of Saint Sophia to prevent its falling back into the hands of the Christians. On 18 March the last great Allied bombardment had occurred; the same evening General Mertens, the German chief technical officer in the Dardanelles, told an American correspondent that he expected the British back next morning early, and if they came, he expected to be able to hold out for a few hours only. But the Allied fleet did not return until it was too late. From a military point of view, there should have been a renewal of the naval attack on effective lines, or the whole Gallipoli project should have been given up, for a preliminary naval success alone could render military co-operation advisable.

General Hamilton had picked out six spots round the southern point of the peninsula to land his troops. Two faced the straits; the others the open sea. These landing places or "beaches" were designated by letters of the alphabet for want of distinct geographical definitions. Inland from these beaches the Turks had constructed a vast labyrinth of trenches and barbed-wire entanglements, which were plainly visible from the ships at sea. The two spots facing the straits were (1) a sandy beach inside Sedd-el-Bahr about 300 yards across,

facing a semi-circle of steeply-rising ground, designated Beach V; and (2) a small beach by Eski Hissarlik, on the east of Morto Bay, designated Beach S. The others were (3) a small sandy beach just south of Tekke Burnu, Beach W; (4) half a mile north of this was another small break in the cliffs, Beach X; (5) two miles further up the coast the mouth of a small stream indenting these cliffs, Beach Y 2; with another, one mile and a half up a scrub-covered gully which looked as if active infantry might be able to scramble up on the heights, Beach Y. The next (6) was about 12 miles farther up, above Gaba Tepe. As already mentioned, the troops set out from Tenedos on 24 April 1915 and were to be landed early in the morning of the 25th. The landing was begun at 4:20 A.M. Two main landings were to take place — the first at a point just north of Gaba Tepe, the second on the southern end of the peninsula. In addition a landing was to be made at Kum Kale (a promontory on the Asiatic shore), and a demonstration in force to be carried out in the Gulf of Saros (Xeros) near Bulair. The night was calm and very clear, with a brilliant moon, which set at 3 A.M.; the battleships *Queen*, *London* and *Prince of Wales* were delegated to land the troops north of Gaba Tepe, while the battleships *Triumph*, *Majestic* and the cruiser *Bacchante* were to cover the landing by gunfire. In this landing a surprise was attempted. There was no sign of life on the shore; a thin veil of mist hung motionless over the promontory; the sea was as smooth as glass. As soon as it was light enough (5 A.M.) a violent bombardment of the enemy's defenses was begun. Meanwhile the troops were being rapidly transferred to the small boats in which they were to be towed ashore. Not a move on the part of the enemy; and except for a few shells thrown from the Asiatic side of the straits the guns of the fleet remained unanswered. The tows drawing the troops to the Gaba Tepe landing failed to maintain their exact direction and landed the men more than a mile north of the spot selected. The boats approached the land in silence and darkness, and they were close to the shore before the enemy stirred. Then, suddenly, about a battalion of Turks was seen running along the beach to intercept the line of boats. Not a word passed among the invaders — all remained perfectly orderly and quiet in the boats awaiting the enemy's fire, which soon opened and caused many casualties among helpless targets. The moment the boats touched bottom, the Australians leaped ashore and went straight for the enemy with fixed bayonets. So vigorous was the onslaught that the Turks made no attempt to withstand it and fled from ridge to ridge pursued by the 3d Australian brigade. The 1st and 2d brigades came shortly after and were all disembarked by 2 P.M., by which time 12,000 men and two batteries of Indian mountain artillery had been landed. The disembarkation of more artillery was delayed, owing to the enemy's heavy guns firing on the anchorage and forcing the transports to stand farther out to sea. The wild, rough nature of the ground, the necessity for sending any formed detachments as quickly as they landed to the critical point of the moment, and the headlong valor of the scattered groups who had pressed farther inland than was intended, all led to confusion and mixing up of units. Eventually the mixed crowd of fighting men, some advancing from the beach, others falling back before the oncoming Turkish supports, solidified into a semi-circular position with its right about a mile north of Gaba Tepe and its left on the high ground over Fisherman's Hut. During this period parties of the 9th and 10th battalions charged and put out of action three of the enemy's Krupp guns. Meanwhile, the disembarkation of the Australian division was being followed by that of the New Zealand and Australian division — two brigades only. For four hours, from 11 A.M., about 20,000 Turks attacked the whole line; with the assistance of the naval guns the attack was repulsed. Late in the afternoon the Turks made a third determined counter-attack against the 3d brigade, which stubbornly held its ground. Constant attacks were launched by the Turks during the night, but the line held firm, notwithstanding that the men had had practically no rest during the previous night and had been fighting all day over a most difficult country exposed to heavy shrapnel fire in the open. Very serious casualties were incurred. Persistent attacks by the Turks for the next few days prevented the reorganization of the units, thus making any advance impossible until that could be done. On the night of 2 May an effort was made to seize a commanding knoll in front of the centre of the line, but the enemy's machine guns were too scientifically placed, and 800 men were lost without advantage beyond the infliction of a corresponding loss to the enemy. An attempt to seize Gaba Tepe on the 4th also failed, owing to the interminable maze of barbed wire. The Turks also lost heavily; some 24,000 men were constantly kept fighting, many being killed and wounded by the Australian snipers. The scene of this particular landing of the Australians and New Zealanders has since become known as "Anzac Cove."

The first troops landed at Y Beach, the next, the King's Own Scottish Borderers, landed down the coast on the Gulf of Saros. These arrived in two battleships and two transports off Cape Tekeh. At 4 A.M. they approached in the boats covered by fire from H.M.S. *Goliath*. The landing was successfully and expeditiously carried out, the troops gaining the top of the high cliffs overlooking this beach without being opposed, a piece of good fortune due to the well-placed fire from the ships. They were followed by the Plymouth Battalion Royal Marines, who met with severe opposition on the top of the cliffs, where fire from covering ships was of little assistance. After heavy fighting they were forced to re-embark on the 26th. The landing of the 2d Battalion Royal Fusiliers at Beach X was met with heavy fire from the cliffs on both sides. The *Implacable* came close in shore and bombarded those positions until the boats had reached the beach. The men were all landed by 7 A.M. An hour later the *Euryalus* approached Beach W and the *Implacable* Beach X, subjecting both spots to a fierce bombardment, which was kept up until the last moment before landing. But the fire did not have the expected effect on the wire entanglements and trenches, for the troops encountered a withering fusilade from rifles, machine guns and pom poms, and found the obstructions on the beach undamaged. The

Lancashire Fusiliers rushed some Maxim guns cleverly concealed in the cliffs, but suffered heavy losses in taking possession of the beach and its approaches. The W and V beaches were the only two of any size in this area on which troops, other than infantry, could be landed, and failure to capture Beach X might have produced serious consequences, as the landing at V was held up. Turkish snipers swept the shore and a fierce infantry battle was carried on around it throughout the entire day and the following night. The boats' crews also lost heavily and had not the satisfaction of being able to return the fire. During the night of April 25–26 the enemy attacked continuously, and it was not until the afternoon of the 26th, when Beach V was really captured, that the British position on W was secured. Beach V caused the most trouble, for its flanks were strongly guarded by the old castle and village of Sedd-el-Bahr on the east and perpendicular cliffs on the west, while its whole foreshore was covered with wire entanglements. As at all the other places, the first landing here was made in boats; but the experiment was tried of landing the remainder of the covering force by means of a collier, the *River Clyde*, which had been specially prepared for the occasion by having large ports cut in her sides, and gangways built whereby the troops could reach the lighters which were to form a bridge to the beach. The same as W, Beach V was heavily bombarded, with a similar result, namely, that the defense was not put out of commission. When the first troops attempted to land they were met with a murderous fire from rifles and machine guns, which was not opened until the boats had cast off from the steamers. Nearly all the men of the first trip were killed or wounded; a few managed to find slight shelter under a bank on the beach; one boat entirely disappeared and in another there were only two survivors. As soon as the boats had reached the beach the *River Clyde* was run ashore under a violent fire toward the eastern end where she could form a convenient breakwater during future landing of stores and other supplies.

As the steamer grounded, the lighters which were to form the bridge to the shore were run out ahead of the collier; but they failed to reach their proper stations, and a gap was left between two lighters over which it was impossible for men to cross. Some attempted to land by jumping from the lighter which was in position into the sea and wading ashore. This method proved too costly in life, the lighter being soon heaped with dead; the disembarkation was ordered to cease. Commander Unwin, R.N., with a handful of midshipmen and sailors left the *River Clyde* and, standing up to their waists in water under heavy fire, got the lighters into position. Though the bridge to the shore was now passable, it could not be used; any one appearing on it was instantly shot down, hence the troops remained on the steamer till dark. A launch and a pinnace manned by volunteer crews from the warship *Albion* attempted to complete the bridge next morning, but the Turkish fire rendered the undertaking impossible, and the work was finally carried out in the dark. No more troops were landed on Beach V, and those originally intended for this spot were diverted to Beach W. Some of the troops, as already mentioned, found shelter of a precarious nature on the shore, whence they could not emerge as the Turks directed an uninterrupted fire against their cover. For a whole day they lay hidden; the warships and some Maxims mounted in the *River Clyde* did their best to keep down the enemy's fire. Many heroic deeds were performed in rescuing wounded men in the water. During the night of the 25th–26th the men remaining in the steamer were able to land under cover of darkness and obtain some shelter on the beach and near the village of Sedd-el-Bahr, for the possession of which now began a most stubborn fight, which continued until the afternoon of the 26th, supported by gunfire from the *Albion*. When that vessel ceased fire the troops charged and stormed Hill 141, the capture of which effectively cleared the enemy from the neighborhood of Beach V, which could now be used for the disembarkation of more troops.

The detachment detailed for Beach S, at Eski Hissarlik Point, consisted of the 2d South Wales Borderers. Their landing was delayed by the current, but by 7:30 A.M. it had been successfully accomplished at the cost of some 50 casualties. A half-company of Dublin Fusiliers had landed without opposition at Sedd-el-Bahr; they made several attempts to enter the village of that name, but were compelled to withdraw with heavy loss. On Beach S the Borderers and a detachment of the London Field Company (Royal Engineers) were landed in boats; little opposition was encountered, and the subsequent enemy attacks were easily repulsed with the aid of the covering ships. The landing at Kum Kale was undertaken by the French. This point is on the Asiatic side of the Dardanelles, and it was of great importance to prevent the enemy from occupying positions on this side, whence gunfire could be brought to bear on the transports off Cape Helles. After a strong preliminary bombardment the French began to land about 10 A.M., and by the afternoon their whole force was ashore. When they attempted to advance to Yeni Shehr, their immediate objective, they were stopped by heavy fire from concealed trenches south of Kum Kale village. During the night of the 25th–26th the Turks made several counter-attacks, all of which were repulsed. During one of these fights 400 Turks were captured, their retreat having been cut off by the fire from the battleships. On the 26th, when it became apparent that no advance was possible here without entailing severe losses and the landing of large reinforcements, the order was given for the French to withdraw and re-embark. By the evening of 27 April the Allied forces had established themselves on a line some three miles long from Eski Hissarlik northwest to a point on the Gulf of Saros, 3,200 yards northeast of Cape Tekke — the mere tip of the peninsula. All the beaches except Y, which had been abandoned, were in working order so that an advance could be undertaken. On that day the *Queen Elizabeth*, the most powerful vessel afloat, performed a remarkable feat of naval gunnery in sinking — in three shots — a Turkish transport in the Dardanelles at a distance of nine miles, firing over a range of hills from the other side of the peninsula.

The troops holding the short line at the tip were the 29th division less two battalions, on the left and in the centre; four French battalions on the right, and beyond them the South Wales Borderers on the extreme right. The heavy casualties which the landing entailed had made this line dangerously thin, but it was essential to make a move quickly before the enemy could recover and receive fresh reinforcements. A general advance was therefore ordered for 28 April. The 29th division was to march on Krithia, the French were to extend their left in conformity with the British movements and to retain their right on the coast line south of the Kereves Dere. Although by this time the troops had had no proper rest for four days, they responded vigorously to the call. It was soon discovered that the enemy trenches and wire entanglements presented almost insuperable obstacles to a rapid advance. The French reached to within a mile of Krithia and could get no farther; the Turkish resistance grew stronger; nearly the whole Allied line was thrown into the battle; ammunition was running short and the men were exhausted. The small amount of transport was insufficient to keep them supplied. For the time being hopes of securing a footing on Achi Baba, a 600-foot hill, had to be abandoned. The best that could be expected was to hold what had been taken. A partial retirement was ordered, in which the Worcester regiment suffered severely. During the day's fighting the units got mixed up; the French had lost many officers and needed time to reorganize. April 29 was devoted to straightening the line and consolidating the positions. Nothing happened on the 30th. More French and Indian troops had meanwhile arrived and were formed into a reserve. On the night of 1 May the Turks opened a hot shell fire and delivered a series of fierce attacks in three solid lines. The enemy officers carried colored Bengal lights to fire from their pistols, red indicating to the Turkish gunners that they were to lengthen their range; white that the Allied front trenches had been stormed; and green that the main position had been carried. The Turk method was to crawl on hands and knees until the time came for the final rush. The first momentum of this ponderous onslaught fell upon a brigade whose officers had nearly all been killed or wounded, so that when the Turks came right on without firing and charged into the trenches with the bayonets they made a big gap in the line. This was instantly filled up by the 5th Royal Scots (Territorials), who faced to their flank and charged the enemy with the bayonet. The storm next broke in fullest violence against the French left which was held by the Senegalese, who gave ground after several charges and counter-charges. A company of the Worcesters was thrown into the gap and the position was maintained for the night. At 5 in the morning the Allied line again advanced, and by 7:30 the British left had gained some 500 yards, while the centre and right also gained some ground with the French left, but the remainder of the French line was unable to make progress. Enemy machine guns now battered the British centre and left; it was found impossible to hold the ground, and the whole line was withdrawn to its former trenches. The enemy also had lost many men and spent a day (2 May) burying his dead under a red crescent flag. At 9 that night they again attacked the whole Allied line, making their chief effort against the French, where the ground was favorable to approach. For the next few days the French were again attacked with severe losses, and a portion of their line was taken over by the 2d Naval brigade. The Allied losses up to this stage had been extremely heavy; exclusive of the French, the Allies had 177 officers and 1,990 other ranks killed; 412 officers and 7,807 other ranks wounded; 13 officers and 3,580 other ranks missing. The first battle for Krithia had failed. The second attempt began on the 6th. Both sides had drawn heavily upon their stock of energy and munitions; each side had fallen back (the Turks half a mile), and it seemed clear that whichever could first summon up spirit to make another dash must secure at least a few hundreds of yards of the ground between the two fronts. Even so small a portion of territory, whatever it might mean to the enemy, was a matter of life or death to a force crowded together under gun-fire on so narrow a tongue of land. For three days (6–8 May) a violent battle raged on the western end of the peninsula; the net result was an Allied gain of 600 yards on the right and 400 yards on the left and centre. The French had made a valuable capture of ground from which the enemy made desperate efforts to dislodge them on the 9th and 10th. On 11 May, the first time for 18 days and nights, the 29th British division was withdrawn from the firing line and replaced by the 42d division and the 29th Indian Infantry brigade, both newly arrived ashore. During the whole of the fighting the naval guns on the ships took a prominent part, though the enemy's main position had not been seriously touched. From time to time Turkish warships from Nagara (beyond the Narrows, in the straits) tried to intervene, but the *Queen Elizabeth* kept them off. The fortified works at the Black Sea end of the Bosporus were occasionally shelled by Russian warships, while one Russian vessel, the *Askold*, was attached to the French squadron off Gallipoli.

After the second battle for Krithia a period of trench fighting and siege tactics followed, but points of vantage were gained and lost in many days of heroic effort. A notable instance was the capture of the Gurkha Bluff, a precipitous point from which enemy machine guns had frequently held up the left of the attacks. During the night of 10–11 May the Gurkhas started off to seize this bluff. Their scouts descended to the sea, worked their way for some distance through the broken ground along the shore, and crawled on hands and knees up the precipitous face of the cliff. On reaching the top they were heavily fired on. As a surprise the enterprise failed, but as a reconnaissance it proved very useful, for on the 12th a grand attack was carried out with the 29th Indian brigade (to which the Gurkhas belonged) with the co-operation of the Manchester brigade and two battleships. Early in the evening the Turkish trenches were bombarded by land and sea, while under cover of this fire the Gurkhas once more crept along the shore

and assembled below the bluff (now called "Gurkha Bluff") and, the attention of the Turks being taken up with the bombardment, they swiftly scaled the cliffs and carried the position with a bayonet rush; their machine-gun section was hurried forward, and at 4:30 A.M. a second double company was rushed up to join the first. An hour later these two double companies extended and began to entrench. At 6 A.M. a third double company of the fiery Gurkhas advanced across the open from their former front line of trenches under violent fire and established themselves on a diagonal line on the newly captured redoubt. Numerous exploits of this nature took place; indeed, no day passed without something of the sort being attempted or achieved either by the French or the British.

Turning now to where the Anzacs had landed and dashed for the cliffs, their line formed a rough semi-circle inland from the beach with a diameter of about 1,100 yards. The firing line was everywhere close to the enemy's trenches and in all sections there were continuous sapping, counter-sapping and bomb attacks. The Turks scattered their shells over the trenches and beaches with a liberal hand. As many as 1,400 shells fell on Anzac Cove within an hour, and these were of all calibres, from 11 inches to field shrapnel. The Anzacs were perched on the cliffs of Sari Bair, about three miles above Gaba Tepe. Their special mission was to hold as large a body as possible of the enemy in front of them; to keep open a door leading to the vitals of the Turkish position; and to lessen the strain at Cape Helles. On 9 May a night assault, supported by enfilade fire, was carried out on the enemy's trenches in front of Quinn's Post; the ground was taken at the point of the bayonet. At dawn on the 10th a strong counter-attack forced the Anzacs to evacute the trenches and fall back. In this fight the Allied guns wrought great havoc, for on that day two Turkish regiments lost 600 killed and 2,000 wounded. A sortie was made on the night of 14–15 May from Quinn's Post with the object of filling in Turkish trenches in which bomb throwers were inconveniently active. The attempt failed with a loss of 70 casualties; the commander, Gen. Sir W. B. Birdwood, was wounded. On 14 May General Gouraud arrived and took over from General d'Amade the command of the French expeditionary force. On 15 May Maj.-Gen. W. T. Bridges, a highly popular officer commanding the Australian division, was severely wounded and died a few days later. Born in Scotland and educated in Canada, General Bridges obtained his commission in the New South Wales artillery in 1885 and had served in the South African War of 1899. In 1904 he was Inspector-General of the Commonwealth Military Forces.

Turkish reinforcements had meanwhile arrived in great numbers — according to prisoners' accounts, 30,000 fresh troops under the command of Liman von Sanders. These were thrown against the Anzacs on 18 May and a stiff battle accompanied by intense artillery fire raged for over a day. Repeated bayonet attacks by the Turks were repulsed with much slaughter; over 3,000 dead were lying in open view of the British trenches. During the next four days negotiations took place for a suspension of arms. The first move in this direction occurred on 20 May, at 5 in the afternoon, when white flags and red crescents (the Turkish equivalent to the Red Cross) began to appear all along the line. A Turkish staff officer, two medical officers and a company commander came out into the open. They were met by Major-General Walker, commanding the Australian division, half-way between the trenches. The staff officer explained that he was instructed to arrange a suspension of arms for the removal of dead and wounded. He had no written credentials, and he was informed that neither he nor the Australian general had the power to arrange such a suspension of arms, but that at 8 P.M. an opportunity would be given of exchanging letters on the subject, and that meanwhile hostilities would recommence after 10 minutes' grace. At this time some stretcher parties on both sides were collecting wounded, and the Turkish trenches opposite were packed with men standing shoulder to shoulder two deep. Matters were less regular in front of other sections, where men with white flags came out to collect wounded. Meanwhile it was observed that columns were moving in the valley up which the Turks usually brought their reinforcements. On hearing the report of these movements, General Birdwood ordered his trenches to be manned against a possible attack. As the evening drew in the enemy's concentration continued, and everything pointed to his intention of making use of the last of the daylight to get his troops into position without being interrupted by British artillery. A message was therefore sent across to say that no clearing of dead or wounded could be allowed during the night, and that any negotiations for such purpose should be opened through the proper channel and initiated before noon on the following day. Immediately after this interesting interlude the stretcher and other parties fell back and general fire broke from both sides. In front of the British right masses of men advanced behind lines of unarmed men holding up their hands. Firing grew fiercer all along the line, accompanied by a heavy bombardment of the whole British position, leading to the belief that the attack was prearranged. Machine-gun and rifle fire continued until about 4 in the morning. Negotiations were resumed on 22 May with the representatives of Essad Pasha (who must not be confounded with Essad Pasha of Albania), resulting in arrangements for a suspension of arms from 7:30 A.M. until 4:30 P.M. on 24 May. The wholesale funeral ended about 3 o'clock on that day: some 3,000 Turkish dead were removed or buried in the area between the opposing lines — No Man's Land. The whole of these had been killed or had died there of wounds on or since the 18th, a space of seven days. Punctually on the expiration of the time limit hostilities recommenced.

The next great effort to advance in the south of the peninsula was made on 4 June. To distract the enemy's attention from that theatre of war the Anzacs began a series of demonstrations and sorties after sunset on that day. In the south, fighting had gone on uninterruptedly during May up to the night of 4 June. On the day of the general attack the

enemy's front line of trenches ran from the west of the Kereves Dere in a northerly direction to the sea. The Allied battle line from right to left was held in this order: The French expeditionary force, the Royal Naval division, the 42d East Lancashires, and the 29th division. The British front alone was little over 4,000 yards, and the total infantry available amounted to 24,000 men, including a reserve of 7,000. At 8 in the morning the artillery overture broke out, lasting, with half an hour's intermission, until noon, when the range was extended and the infantry advanced with fixed bayonets. The assault was immediately successful. On the extreme right the French 1st division carried a line of trench, while the 2d division with a gallant dash captured a strong redoubt for which they had already fought three desperate contests. Only the extreme left of the French was unable to gain any ground — a feature destined to have an unfortunate effect upon the final issue. The 2d Naval brigade rushed forward; the battalion from H.M.S. *Anson* captured the southern face of a Turkish redoubt which formed a salient in the enemy's line, the *Howe* and *Hood* battalions captured trenches fronting them, and by 12:15 the whole Turkish line forming their first objective was in their hands. In five minutes the Manchester brigade of the 42d division had stormed the first line of Turkish trenches and 25 minutes later had carried the second line, making a progress of 600 yards. On the left the 29th met sterner opposition. In most places the Turks crossed bayonets with them, but after a struggle of some minutes the front line was taken. On the extreme left the front Turkish trench was so situated that it had escaped the artillery bombardment, leaving the barbed wire obstacles intact. The result was that, though the 14th Sikhs on the right flank pushed on despite losses amounting to three-fourths of their effectives, the centre of the brigade could make no headway. A company of Gurkhas actually forced its way into a Turkish trench, but the failure of the rest of the brigade threatened them with isolation, and they were withdrawn. Meanwhile, reinforcements were rushed to the left to make a fresh attack. On the right, the Turks poured in fresh reserves and forced the French 2d division to fall back from the redoubt they had won, which retirement uncovered the right flank of the Royal Naval division. These also had to retire with heavy loss from their conquered terrain, thus exposing in turn the *Howe* and *Hood* battalions to enfilade fire so that they, also, could do nothing but retreat across the open under galling rifle and machine-gun fire. By 1:30 P.M. all the gains had been lost again in this section, while the *Collingwood* battalion, which had rushed to the rescue, was practically annihilated. All the bravery and sacrifice of the first charge appeared to have gone for naught. The Manchesters were still holding on to their captured trench, while every effort was made to sustain them by sending reinforcements, but it soon became clear that their position was untenable. In this dilemma orders were issued for a fresh attack in force at 3 P.M., an arrangement that was twice postponed at the request of General Gouraud, who finally reported that he could do no more that day with any chance of success. By 6:30, therefore, the Manchesters had to be extricated from their perilous position from the second Turkish lines. There was some difficulty in persuading them to retreat to the front Turkish line which they had taken in the first five minutes. Several other Allied attacks were frustrated; at the close of the battle the net result was an advance of from 200 to 400 yards on a front of nearly three miles. Further attempts were made on the Turkish defenses on 21 June, in which the French lost 2,500 men; the enemy's loss in counter-attacks was estimated at 7,000. Yet the French had succeeded in storming the first and second lines on their front. On the 27th the British left carried four Turkish lines and advanced about a mile. Further severe fighting took place from 28 June to 2 July, between which dates the Turks were reported to have lost over 5,000 killed and 15,000 wounded. On 5 July the Turks made another big attempt to drive the Allies into the sea, though the venture failed. Throughout July there occurred at intervals minor attacks by one side or the other, such as characteristic trench warfare produces, with little results. Early in August the Turks announced the loss of one of their battleships, the *Hairredin Barbarossa,* sunk by a submarine. Other Turkish vessels were sunk about the same time. Against this, however, had to be set the loss of a large British transport, the *Royal Edward,* sunk by a submarine in the Ægean Sea with a loss of about 1,000 men.

A new armv was landed at Suvla Bay on 6 August and an attempt was made to capture the summit of Sari Bair and Chunuk Bair ridges by simultaneous attacks by the Anzacs and the new army. The Anzacs reached the objective, but the attack from Suvla did not make the progress expected, with the result that, as had happened too often in this campaign, the temporary victors had to retire from the ground they had captured. The two armies came into touch, however, making a front of about 12 miles. Another assault was simultaneously delivered at the south, but no decisive result was gained. At the end of September the fighting on Gallipoli again resumed the form of uneventful trench work. The campaign had simply failed; from the first it had been a policy of sacrificing armies for acres. General Hamilton apparently still believed in success, but the British government had lost faith; they decided to write the expedition off as a bad debt. The stream of men and munitions dried up; wounds, sickness and fatigue left their marks upon the discouraged soldiers. On 11 Oct. 1915 Lord Kitchener, then Minister for War, cabled to Hamilton asking for his estimate of the losses likely to be involved in an evacuation of Gallipoli. Hamilton replied in terms showing that such a step was "unthinkable" to him. On the 16th he was recalled. Failure was written large across the Gallipoli-Dardanelles campaigns. The only event of importance which remains to be recorded is the withdrawal of the troops. Hamilton was succeeded by General Monro, and during the short interregnum General Birdwood took command. Monro arrived with instructions to report on the situation, as to whether the peninsula ought to be evacuated on military grounds or another attempt made to carry it. He reported that "the mere fringe of the coast line had been secured.

The piers and beaches upon which they depended for all requirements of personnel and material were exposed to registered and observed artillery fire. Our entrenchments were dominated almost throughout by the Turks. . . The force, in short, held a line possessing every possible military defect . . .» An evacuation presented difficulties as great as a landing; since every corner of the peninsula was exposed to hostile fire, it was not possible to withdraw any of the troops from the shell-swept area. The troops were enervated by disease; in consequence of terrible losses there was a dearth of officers. General Monro considered that no advance could reasonably be expected from the positions held by the expeditionary force, and that the troops here locked up should be diverted to a more useful theatre of war. Evacuation was decided upon. Winter set in with heavy storms; hurricanes and torrential rains swept the peninsula; floods spread over the country, filled the trenches and cut off communications. Troops, animals and supplies not needed for a long campaign were to be taken off first. Next were to come the men, guns, animals and stores except those required for a defensive during a certain period; and the last batch were to withdraw as rapidly as possible leaving behind, if necessary, guns, animals and stores not required for the time being. The three men upon whom the task now devolved were Generals Monro and Birdwood and Admiral Sir Rosslyn Wemyss. They began with Suvla. This was a wise step, for it could afford the enemy no clue, since the removal of these troops did not necessarily indicate abandonment of the expedition. From 10–18 Dec. 1915 the surplus of the force at Suvla gradually melted away to seaward. While the front was held, corps behind the lines were withdrawn to the embarkation beaches first, with full provision in the event of attack. Intermediate positions were prepared for this purpose. The final withdrawal from here was timed for the night of 19–20 December. The sea was calm and the moon was veiled by hazy clouds; the covering ships had taken up their positions, ready to open fire if the enemy showed any activity. Everything went smoothly; when the first batch had gone far enough, the men in the trenches left them; every vehicle and gun was embarked. Anzac and Suvla were cleared; what little had to be left behind was destroyed. The Turks grew suspicious; the movement took them completely by surprise; they were not conscious of the operation until it had been completed. Not a single life was lost, and only three men were wounded. The enemy now hurried his liberated troops and guns from Suvla and Anzac to the southern end of the peninsula, strengthening his batteries on both sides of the straits. No attempt was made to remove the Allied army from the south; it appeared as though the British authorities at home were still unwilling to give in. The position of that army grew more perilous as the Turks increased their strength; after a delay of eight days orders came from London to withdraw the remainder of the force from the peninsula; already the bulk of the French troops had been taken off by their own ships, and most of their section of the line had been taken over by the Royal Naval division and the 86th brigade. The embarkations were conducted in the night time; by daylight nothing unusual could be observed by the enemy. Meanwhile, the Turks continued to bombard the Allied lines, to which the battleships responded. The remainder of the French troops were taken off first. The final withdrawal was to take place during the night of 8 Jan. 1916. With some trouble owing to the weather the embarkation was duly carried out according to program; the guns which had been ordered from London to be brought away were left to cover the movement and destroyed at the last moment. By 3:30 A.M. the last man had been taken on board. The store and ammunition dumps which had been left were provided with time fuses for their destruction. As the last parties left the shore these broke out into flames at different points, illuminating the darkness. Magazines of munitions and explosives blew up in rapid succession; red lights flared up over the Turkish lines; their heavy artillery burst into a furious bombardment of the empty beach; the last ship steamed away, and the ill-fated Gallipoli campaign was over. Altogether the tragic adventure had cost the British Empire the lives of 1,785 officers and 31,737 other ranks; 3,010 officers were wounded, and 75,508 of other ranks; missing and prisoners amounted to 258 officers and 7,431 of other ranks; making a total of casualties of 5,053 officers and 114,676 of other ranks. These figures do not include the heavy French losses. In due course a commission was appointed to inquire into and report on the causes of the failure. In a scholarly criticism of the campaign published in London, December 1919, by Maj.-Gen. Sir C. E. Callwell, K.C.B., the writer expresses the opinion that the principal cause of the failure was "not so much the consequence of topographical conditions nor of the disposition of the enemy forces, nor of bad luck, as it was the upshot of a factor that had not been taken sufficiently into account. This factor was the rare fighting qualities that the Osmanli soldier was to display in the campaign . . . But if Sir Ian Hamilton and his staff at the outset underrated Ottoman valor and grit, if they assumed too readily that the opposition that would be offered by this soldiery would not be of the most whole-hearted type, they were only following the lead of governments which, in a happy-go-lucky mood and confident that the enemy would crumble up before a show of bluff, had dispatched the expedition on a mission of which they had failed to realize the danger, and for which suitable preparations had not been made by them in advance.» ('The Dardanelles.')

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10. BALKAN CAMPAIGN. The supreme importance of the Balkan States in the European struggle is denied by no one to-day. While there may have been animosities between the Great Powers of such nature that they would ultimately lead to a general conflict, and that if the Balkans did not furnish the proximate occasion, such occasion would have arisen elsewhere, the incontestable fact remains that the Balkans provided the occasion. A great part of the Jugo-Slav race lived under the rule of Austria-Hungary and as their national consciousness grew intense they became ever more dissatisfied with that alien rule. Serbia, now become an

independent state, had championed the Pan-Slav movement with the object of uniting all Jugo-Slavs under her flag. It thus became well-nigh imperative for Austria-Hungary to crush this state, which fomented unrest among the subjects of the dual-monarchy and at the same time to strike a blow at Russian prestige in the Balkans. The murder of the Austrian crown prince at Serajevo furnished Austria her opportunity. The insulting ultimatum to Serbia followed and war burst forth. Russia, the big Slav sister, refused to stand aside and see Serbia crushed and, to settle accounts with Austria, she cast the die in favor of war and the great conflict began.

War Strength of the Balkan States.— Before the World War few realized the great strength of the Balkan States. The brilliant defense of Serbia in 1914 proved an enlightening example, as did also the rapid campaign of 1912 when Serbia, Bulgaria and Greece destroyed in a few weeks the remains of the Turkish Empire in Europe. The forces of the Balkan States represented in 1914 a total of about 1,300,000 men. Of this number Serbia put about 250,000 men in the field, together with a territorial reserve of 50,000; Montenegro, her ally, had 50,000 seasoned veterans; Rumania had an army of 500,000, Greece 250,000 and Bulgaria 350,000.

First Attack by Austria-Hungary.— On 25 July 1914 Serbian mobilization began and three days later 10,000 Serbians were massed for the defense of Belgrade, the national capital. The main Serbian forces were concentrated at Lazarevatz, Arangelovatz and Palanka on a line just south of Obrenovatz, Belgrade and Semendria. Austria at first contented herself with an intermittent bombardment of Belgrade, but on 12 August she threw strong columns across the Drina and Save in the northwest corner of Serbia. These forces had as their objective the capture of the Serbian arsenal at Kragujevatz. Putnik, the Serbian commander-in-chief, moved the bulk of his forces westward to the Jadar Valley to meet the Austrian invasion from the northwest, at the same time sending a force to repel the Austrian column which had crossed the Save at Shabatz. Putnik aimed to prevent a junction of the Austrian forces. On 16–17 August he completely routed an Austrian force of 60,000 on the Shabatz-Lechnitz, a line near the Bosnian frontier. In the week following the Serbs drove this success to its conclusion farther to the south, taking Tzer, Iverak and Shabatz and crossing the Dobrava. In this nine-day struggle about 400,000 men were engaged; the losses were heavy, probably about 10,000 killed and 20,000 wounded on the Austrian side and 18,000 killed and wounded Serbs. The latter took over 4,000 prisoners, quantities of rifles and other military stores and a great number of cannon. The first Austrian attack had failed. Serbian and Montenegrin forces now attempted to penetrate Bosnia, while on 1 September another Serb force invaded the region between the Save and the Danube. The Austrians were reinforced, however, and proceeded to develop an attack along the line of the Drina from Jarak to Liubovia. The Serbs in consequence were obliged to retire to their own territory. After six weeks of desultory fighting the Austrians began an advance over the whole frontier. Valievo fell on 11 November; on the 20th the Serb centre was driven in near Lazarevatz and by the end of the month the Austrian front extended from Belgrade in the north along the line of the Belgrade Railway to the western branch of the Morava in the south.

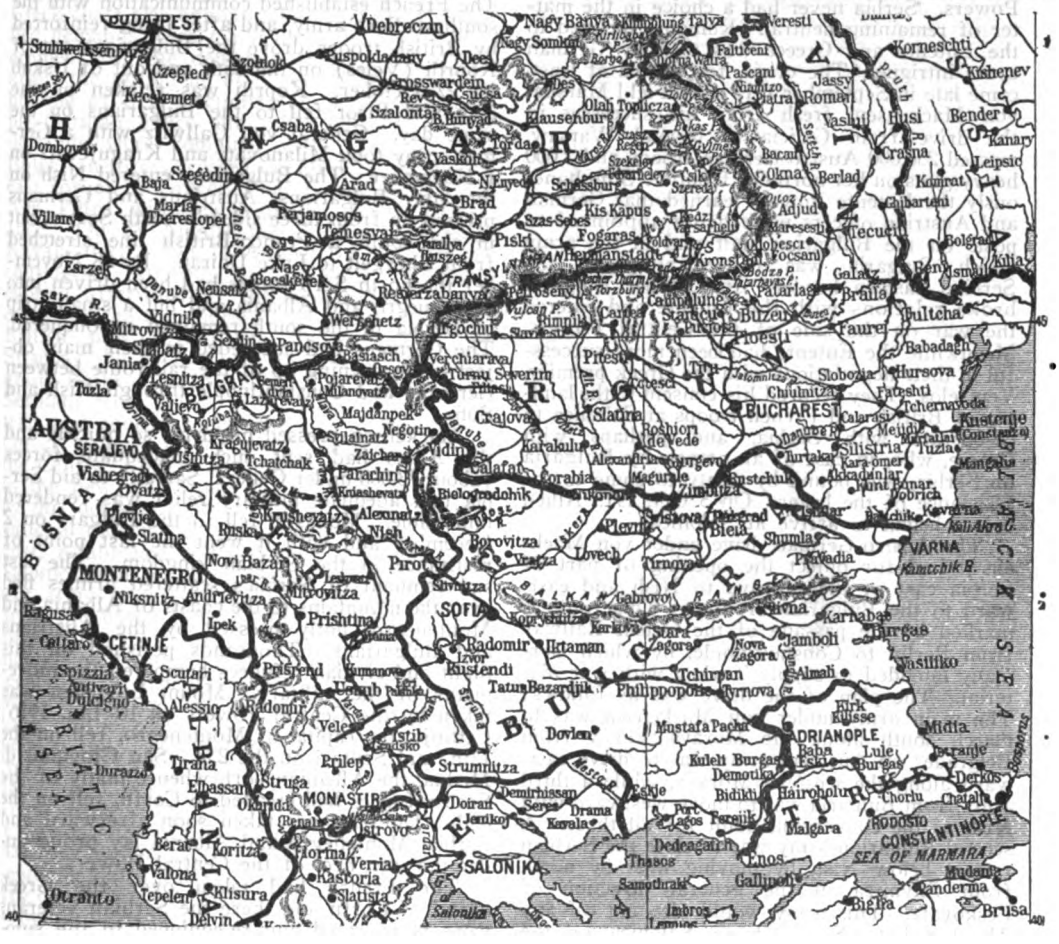
With the assistance of the Montenegrins the Serbians made valiant efforts to penetrate to Serajevo. They succeeded in placing their armies on Austrian soil and on 10 September recovered Semlin. They also succeeded in thwarting an attempt of the Austrians to cross the Save. The Serbs also planned a siege of Ragusa and actually invested that city in the middle of October but toward the latter part of the month both they and their Allies, the Montenegrins, were in retreat to the Serbian frontier across the Drina. The cause was partly the exhaustion of their supply of munitions and partly because Austria's regiments had received strong reinforcements of crack Bavarian regiments. The Serbs made a gallant stand at Valjevo about the middle of November but were obliged to retreat. This retreat uncovered the Serbian positions on the Danube and the Serbs were compelled to evacuate Belgrade, the capital (the government being temporarily removed to Nish). General Franck with an Austrian army corps formally entered and occupied Belgrade on 2 December, but he was not destined to remain long in possession of the Serb capital. The Serbs received a supply of sorely needed ammunition on 3 December and King Peter visited the army and by his presence and bearing did much to restore the somewhat shattered morale of his troops who had endured terrific hardships and had met severe losses in defending their native land.

Here it is appropriate to state the purpose of the Central Powers. Trench warfare had begun on the Western and Eastern Fronts and Britain, the chief antagonist of the Central Powers, was unscathed by the war. The only effective way of reaching her was to attack such of her colonies as were accessible by land. The strategy of the Central Powers, therefore, had for object the crushing of Serbia and the bringing of Bulgaria into the war on their side. With Serbia eliminated by conquest and Bulgaria fighting by their side the road from Berlin to Constantinople would be cleared for the passage of German munitions and other war supplies and skilled personnel and Germany could satisfy the needs of the thousands of Turkish troops who were in sore need of arms, ammunition and trained leaders. With German aid via the Balkans the Turkish armies would be enabled to direct attacks against Egypt via the Isthmus of Suez and against India through the valleys of the Tigris and Euphrates. With Egypt conquered India would be isolated and British rule in North Africa brought to an end, and with India menaced it was hoped that Britain might be induced to save her empire by deserting her Allies. Such were the aims which formed the motive for the crushing of Serbia — the necessary preliminary step in the scheme of conquest.

Serbia, undeterred by these successes of the enemy, resumed the offensive on 2 December, took Suvobor on the 5th and drove back the invaders to Valievo. The five Austrian corps in Serbia became separated and a retreat more or

less disorderly followed to the border. On 15 December the Austrians were driven out of Belgrade which they had held from 29 November. About 40,000 prisoners were taken by the Serbs and Austria left 50,000 killed and wounded behind her in her retreat.

At this stage Serbia was too exhausted to follow up her advantage, while the Russian pressure on another front demanded the serious attention of Austria. For several months the only fighting on the Balkan front was some desultory firing across the Danube. Meanwhile many asked Rumania to permit the forwarding of military supplies through her territory to Turkey. Rumania refused this demand. At the same time the Entente vainly strove to adjust the differences between the Balkan States and sought to re-establish the Balkan League. On the whole the less said of Allied diplomacy at this juncture the better. It failed altogether to appraise the situation. On 6 March 1915 a political crisis developed in Greece. Venizelos, who advocated the entry of his country into the war on the side of the Entente, and who had



Map Showing Balkan Theatres of War

the Serbian forces had been decimated by typhus, Turkey and Italy had become belligerents and fresh problems were thrust upon the Balkan States. From the beginning of the war Germany and Austria had sought the support of Bulgaria and tried to make her resent the treatment meted out to her at the hands of Greece and Serbia after the second Balkan War. Rumania had ambitions to take under her ægis the millions of Rumanians in Transylvania. The latter nation was not molested until von Hindenburg had driven back the Russians and restored German prestige in the East. When the Turkish demands for munitions necessitated prompt and effective measures Germany sought an understanding with Bulgaria even to the extent of ceding to her part of West Thrace in order that Greece might have a free hand to realize her national aspirations in Asia Minor, now retired from the premiership in defeat owing to German intrigue. Events were little altered, however, and he was returned to power on 21 August. The Entente powers were now bringing pressure on Serbia, Rumania and Greece to satisfy the claims of Bulgaria and Serbia yielded. Bulgaria in July secured a concession concerning the Dedeagatch Railway from Turkey but the agreement was not publicly acknowledged until 22 September. Following this acknowledgment the mobilization

of the Bulgarian army was announced. Greece responded on 24 September with a counter-mobilization order. Rumania already on 4 Aug. 1915 had voted a war credit of $20,000,000 and was watching closely the concentration of Austrian forces on her frontier near Brasso in retaliation for her refusal to permit supplies to pass through to Turkey and for the recently imposed embargo on cereals.

Conquest of Serbia.—Above have been recounted some of the diplomatic moves which resulted in Bulgaria going over to the Central Powers. Serbia never had a choice in the matter of remaining neutral. Rumania inclined to the Entente and Greece was torn by German court intrigue. The crisis, for Serbia at least, came late in September 1915 when Field Marshal von Mackensen, fresh from his successes in the drive from Galicia to beyond Warsaw, massed 250,000 Austro-German troops and 2,000 heavy guns on her northern frontier. Simultaneously the Entente Powers learned that German and Austrian officers were being appointed to posts on the Bulgarian staff and in the army which Bulgaria was concentrating on the Serbian eastern border. In October Bulgaria broke relations with the Entente and entered the war on the side of the Central Powers. Meanwhile the Entente had been more successful in their negotiations with the Greek premier, Venizelos. They secured his consent to the landing of British and French troops at Salonica to co-operate with Serbia, and perhaps with Greece, who, in case of an attack by Bulgaria on Serbia, was bound by treaty to come to the assistance of the latter. On 5 Oct. 1915 Allied forces began to arrive at Salonica.

The Austro-German drive under von Mackensen had for object the opening of part of Serbia east of the Morava to Nish and eastward to the Bulgarian frontier. This route is marked by the passage of the Orient Railway from Berlin to Constantinople, by which Germany intended to supply Turkey with war material. The plan of the drive was as follows: The main army under von Mackensen was to march south along the Morava Valley from Belgrade; an Austrian army was to drive eastward along the western Morava, while a third army from Bulgaria was to move westward with Nish as the converging point for all three. A second Bulgarian army was to close the Serbian retreat below Nish by moving west by north from Slivnitza in the general direction of Leskovatz. This army would also cut off any Allied aid to Serbia from Salonica or the south. The Serb defense was to hold back the centre, escape the crushing sides, and retreat into the mountains of Montenegro in case no help arrived from the Allies.

On 6 Oct. 1915 the Austro-Germans under von Mackensen, von Keovess and von Gallwitz crossed the Drina, Save and Danube. Belgrade was occupied on the 9th. Although they fought heroically the Serbs were pushed back mile by mile by forces immeasurably superior to them. On 17 October the Teuton allies were 15 miles south of Belgrade and on the same day the Bulgarians cut the railway line at Vrania, thus isolating Nish (the temporary Serbian capital) from all Allied help from the south. By the 20th the Bulgarians had pierced the line farther south at Koprili (Veles) and controlled about 100 miles of railway in the heart of Serbia.

The French tried to relieve Serbia by invading Bulgaria between Doiran and Strumnitza north of the Vardar River. The French after stubborn resistance drove the Bulgarians back across the river, but to the north the Bulgarians advanced and on 22 October occupied Uskub, the ancient capital of Old Serbia; another German force crossed the Danube at Orsova and General Bojadieff led another Bulgarian army across the Timok and northward to Prahovo. The French established communication with the southern Serb army, and after being reinforced by British troops drove the Bulgarians out of Koprili (Veles) on the 25th and out of Uskub on 27 October. Koprili was retaken on the 29th and Pirot fell to the Bulgarians on the same day. General von Gallwitz with a German army took Milanovatz and Kragujevatz on 1 November. The Bulgarians entered Nish on the 5th. Bulgarians, Austrians and Germans pressed on from three sides in north Serbia, but in the south a Franco-British line stretched from Ghevgelt to Lake Doiran. By 28 November the north Serb forces had been driven into Montenegro and Albania and but a small strip of Serbia in the south remained unconquered. The Germans had succeeded in their main object — the opening up of the rail route between Germany and Constantinople through Nish and Sofia.

Mackensen pressed his drive so quickly and the Allies had sent such inadequate forces (about 73,000 under General Sarrail) to aid Serbia that adequate military relief was rendered impossible. Monastir fell to the Bulgars on 2 December and with it went the last point of resistance in the Serbian kingdom. The last sad remnant of Serbia's scattered armies fled over the mountains to the coasts of Albania and Montenegro, hotly pressed by the Austrians and Bulgarians. Thousands perished on this flight and civilian refugees hampered the movements of the military. Mount Lovtchen was taken by the Central Powers on 10 Jan. 1916; Cettinje, the capital of Montenegro, fell on the 13th, and Scutari on the 23d. San Giovanni di Medua, the Albanian port, whence many of the Serb refugees had escaped to Corfu, fell on the 25th. Durazzo was taken soon afterward and Serbia, Montenegro and Albania lay prone under the iron heel of the Central Powers.

The French had taken over the Greek island of Corfu and there the Serbian veterans were recuperated and re-equipped in the summer of 1916 in preparation for the reconquest of Serbia from the south, jointly with the Franco-British forces based on Salonica. While the Serbs were being driven westward these Franco-British forces were being driven down over the Greek frontier by the Bulgarians. The Allied base at Salonica was consolidated, and on 30 Dec. 1915 it was raided from the air by the enemy. On 28 Jan. 1916 the cape and fort commanding the harbor were occupied by the Allies because it was found that Greece was yielding to the blandishments of the Central Powers. General Sarrail, the Allied commander, replied to the air raid by arresting the Austrian, Turkish, Bulgarian and German consuls, placing them on a war vessel and dispatching them to Athens. Salonica was again

raided from the air on 1 Feb. 1916 and among the killed were three Greek soldiers. Greece was still vacillating and matters remained at this pass for several weeks. Finally, on 26 May 1916. Bulgaria, supported by German troops, demanded of Greece the right to occupy the frontier fortress of Rupel which laid open the port and fortress of Kavala. Greece withdrew her garrisons from Rupel without protest. On 3 June the Allies occupied the government bureau in Salonica and proclaimed a state of siege; on 6 June a "pacific" blockade of the Greek coast was announced and on the 21st Allied demands were made upon the Greek government for the demobilization of the Greek army, the setting up of a new government, the holding of new elections and the dismissal of pro-German police and other officials. These demands were complied with. On 22 June Bulgarian forces crossed the Mesto in the northeast corner of Greece. The Greek garrison of Nea Petra withdrew without offering resistance. On 28 August the Bulgarians entered Kavala itself. On 11 August the first Italian contingent arrived at Salonica, followed shortly afterward by the new Serbian army, eager for the reconquest of its native land. The British now forced the Bulgars along the Struma; the French were on the Salonica-Belgrade Railway at Doiran and at Florina. The Serbians were placed in the Lake Ostrovo district and soon occupied the city of that name. On 27 August 1916 Rumania declared war on the Central Powers and interest at once shifted to the new war fronts in the Balkans created by this decision. Greece still hesitated, but the national movement, led by Venizelos, on 30 August, established a provisional government at Salonica and set about raising a Greek volunteer army to serve with the Allies and to help drive the hated Bulgar from Macedonia. The king of Greece continued to favor the pro-German element and the Allies countered with their second naval demonstration. Further pressure was brought on the government by the Entente, and German ships interned in the Piræus were seized. The Nationalist movement, however, headed by Venizelos, spread rapidly especially in Crete. On 12 September the 4th Greek army corps surrendered to the Bulgars at Kavala without firing a shot, the excuse being that they sought protection from the Allies. In September also interest was revived in the military operations. A Russian contingent was now co-operating with the other Entente forces. On 14 September the French and Serbs stormed Gornichevo and part of the Malka Nidje ridge; on the 15th the Allies took the heights above Florina and the French and Russians entered the town the same day. In the four weeks following the Entente forces had pushed northward to within a few miles of Monastir. The Bulgars, however, were in strongly-fortified positions in front of the town. One of these was driven in on 16 Nov. 1916. At the same time the British crossed the Struma and took several villages on its northern bank. The Allied fleets aided operations in this region by blockading the coasts from the debouchure of the Struma to that of the Mesto.

In the meantime the Greek political situation had developed rapidly. Venizelos, as already stated, had announced his provisional government; on 9 October at Salonica he issued a final warning to the king, in which he said he regarded Greece as a democratic state with a king at its head, but with two governments, of which the provisional government alone held a mandate from the people. On 11 October Admiral D'Artige du Fournet, commander of the Allied fleet off Athens and the Piræus, demanded the surrender of the Greek fleet, control of the police, the lifting of the wheat embargo and many other similar measures. King Constantine was planning a coup from Thessaly, but the Allies seized an ammunition train bound thither and the king's scheme died aborning. The Allies granted a subsidy of $2,000,000 to Venizelos to enable him to equip his volunteer divisions which were to co-operate with the Allied forces based on Salonica.

Rumania followed her declaration of war on 27 August by an invasion of Transylvania through the passes of the Transylvanian Alps. The Austro-Hungarian forces caught unawares, retired, and Rumania found herself in possession of an extensive region including the towns of Hermannstadt, Sepsi Szt. Gyorgy, Kronstadt (Brasso), Petroseny and Kezdi Varsarhely.

The Austro-German Drive against Rumania.— The menace which Rumania's entry into the war offered to Bulgaria and Hungary, Germany's allies, caused Germany to make a special and immediate effort to crush this new foe, whose oil-fields and cereal stores formed a much-needed prize. Von Mackensen, conqueror of Poland and of Serbia, was chosen to lead a Bulgar-German army north through the Dobruja. This front was lightly held by the Rumanians whose main forces were maintaining an offensive in Transylvania. Tutrakan, a fortress on the Danube, fell to von Mackensen on 6 September and he took Silistria three days later. The Rumanians, reinforced by some Russians, fell back by 20 September to the Rasova-Tuzla line, a few miles south of the Bucharest-Kustenje (Constanza) Railway. There in strong positions they were for a time able to hold the Bulgar-German forces and even to push them slightly backward. To make a diversion, at this stage the Russian fleet bombarded Varna, the Bulgarian port on the Black Sea, and threatened to land a force in von Mackensen's rear. The Rumanians also on 4 October crossed the Danube at Riahovo in another attempted demonstration. Both these movements were mere diversions and lacked real force. On 19 October von Mackensen renewed his offensive and pressed forward vigorously. Constanza was evacuated by the Rumanians on 22 October; Rasova fell the next day and Tchernavoda on the 25th. Here the great bridge across the Danube had been blown up by the Rumanians. Von Mackensen kept pushing northward on the Dobruja side of the river, but on 3 November it was announced that the Russian General Sakharoff had taken command in the Dobruja and the Russian threat from the western side of the Danube now checked von Mackensen's advance.

Meanwhile the Rumanian campaign in Transylvania came to grief. On 20 September the Rumanian line extended from the Russian left at Dorna Watra in Bukowina southward to Orsova near the Iron Gate of the Danube. The Austro-Hungarians began a counter-offensive

late in September and at this juncture General von Falkenhayn arrived to take command of the Austro-German forces in Transylvania. He pushed the Rumanians back to the mountain passes with little difficulty and on 30 September almost succeeded in cutting off the main Rumanian army at the Roten Thurm (Red Tower) Pass, south of Hermannstadt. By the end of October von Falkenhayn had forced his way through the chief passes and was from 15 to 20 miles within the Rumanian frontier. Rumania, insufficiently prepared and unsupported to the extent hoped and expected from Russia, and unable to resist the sweeping advance of von Mackensen in the southeast and that of von Falkenhayn in the northwest, made a brave and desperate stand, fighting stubbornly for every foot of soil it yielded to the Central armies. Just before the retreat the Rumanian oil fields had been wrecked by a British expedition commanded by Sir John N. Griffiths, but by 1 Jan. 1917 the entire oil-bearing region was in German hands and the Rumanian court and government were fugitives at Jassy in the north corner of the country. Von Mackensen entered Bucharest on 6 December — his birthday. Rumania made a brave attempt to hold the northern Dobruja with its rich grain fields in the neighborhood of Braila. The main bridgehead of the Danube fell on 3 Jan. 1917 and the fate of the Dobruja was sealed. Braila fell on 5 January. On the 7th the Germans reached the lower Sereth and on the 8th took Focsani, capturing great numbers of prisoners and guns.

Von Mackensen advanced slowly in the early months of 1917, his attempt to reach Hungary through the Gyimes Pass on 14 January was unsuccessful; on the 20th he captured the Fundeni bridgehead on the Sereth, 25 miles above Galatz. General Gurko arrived in January to take charge of the Russian armies on the Rumanian front; an offensive begun on 1 February in the Bukowina yielded over 1,000 prisoners. To the end of March the fighting fluctuated but the Allies were being constantly pressed back. In July 1917 the Rumanians cooperated in the offensive led by General Korniloff in Galicia. The Rumanian army had been reorganized by an advance in March of $200,000,000 by Great Britain. After the Russian failure the Rumanians still fought with surpassing valor to hold on to Moldavia. In August a bloody battle was fought for 14 days around Marasesti with varying success. By September the Germans appeared to have been fought to a standstill. The Central Powers, however, considered Rumania conquered and in October von Mackensen was called to lead the Austro-German drive on Italy.

Greece Enters the War.— During the heroic stand of Rumania against superior odds the Allies were endeavoring to bring about a satisfactory situation in Greece. After much opposition from the king and the pro-German element the Allies landed troops on the Isthmus of Corinth on 11 June 1917. Constantine and the crown prince abdicated, and Alexander, the king's second son, ascended to the throne. Venizelos became Premier on 25 June and on the 30th Greece severed diplomatic relations with Germany and became a belligerent on the side of the Entente. Allied troops were gradually withdrawn from the strategical points they had been holding in Thessaly and the occupied islands. On 4 June Italy proclaimed Albania an independent state under Italian protection. Italian troops occupied Janina on 8 June despite the protests from Athens, but this force was withdrawn after the Venizelos government, friendly to the Entente, had been established at Athens.

The Serbian Front in 1917.— The fighting was of a very minor character, no great operation being undertaken on this front in 1917. Of great importance, however, was a conference, lasting six weeks, which took place at Corfu between the Serbian government and delegates from the Jugo-Slav provinces of Austria-Hungary. On 27 July the terms of agreement reached were said to involve the setting-up of a Serb-Croat-Slovene state with a single flag. The nations thus united would form a state of about 12,000,000 inhabitants. At this conference was born the idea of the Jugo-Slav state, later recognized by the Entente and given formal recognition in the Treaties of Peace of 1919.

The Campaign of 1918.—Fortune which had so long perched on the standards of the Central Powers in the Balkans as elsewhere went over definitely to the Allies in 1918. In the early months of 1918 the Central Powers had their own way in the Balkans. In December 1917, however, the Russian defection was complete. Part of the Rumanian front, formerly held by some 500,000 Russians, was now defended by the Rumanians alone. The armistice between Russia and Germany in December carried a compulsory armistice for Rumania but the Rumanian soldiers refused. Bessarabia proclaimed its independence 15 December and appealed for help to Rumania. Rumania sent an expeditionary force to Kishinev, the capital of Bessarabia, in January 1918 and thus committed an act of hostility against the Maximalist régime in Russia. The Treaty of Brest-Litovsk concluded on 3 March 1918 left Rumania completely isolated and cut off from all Allied help. The Central Powers proceeded to impose a peace on Rumania and on 7 May 1918 the Treaty of Bucharest was signed. Under its terms Rumania lost the entire Dobruja. A larger territory than that lost by Bulgaria in 1913 was to be given back to her, the port of Constanza was placed under the dominion of the Central Powers, Rumania being granted certain rights of access. The Transylvanian frontier was rectified in such manner that Hungary received 2,000 square miles of territory and Austria 920 square miles south of Czernowitz. A clause subsequently added to the treaty wrote off the requisitions of $250,000,000 already made by Germany on Rumania, so that this may be regarded as a species of indemnity. Rumanian state deposits, placed in Moscow early in the war, were transferred to the Central Powers. Rumania was obliged to grant a most-favored nation agreement to Germany and Austria. No export dues were to be levied on petroleum. Control of the railways was to be given to Germany. A new Danubian Commission was to be set up, from which British, French and Italian representatives were to be excluded. The Rumanian army was to be reduced to 30,000, and only 160 rounds of ammunition per rifle were allowed. Rumania never in spirit accepted

these humiliating terms other than as a temporary necessity.

Greece and Albania in 1918.— A mutiny fomented by German agents broke out among the Greek troops at Lanna in February 1918 but it was soon suppressed. The Greek army took its place beside the British on the Struma front and on 30 May fought its first major action and won it. It took the enemy position at Skra di Legen, west of the Vardar, with the aid of French artillery. On 6 July 1918 French and Italian troops, with British monitors aiding from the sea, pushed north along the Albanian coast from Valona, crossed the Vojusa and reached the heights beyond. Other French and Italian troops had worked inland and now threatened Berat from the east. By the 23d Berat and the whole surrounding region had been occupied. The Austrians, however, received reinforcements and were reorganized by General Pflanzer-Baltin. The Italians, under Ferrero, soon found themselves in difficulties and in August withdrew from the Semeni River to the Malakastra Ridge. Here they remained until the Serbs and Allies opened Macedonia in September and paved the way for the reconquest of Albania.

Serbia Reconquered by the Allies.— Not until 15 September did the reorganized Serbian army and its Allies begin a serious offensive northward. From the occupation of Monastir in the fall of 1916 there had been no large scale operations on this front. A strong advance involved great difficulty because of the terrain. To reach Uskub, the strategic centre, the only practicable route was by way of Prilep and the Babuna Pass, which was threatened by the Bulgars who held the Selechka range east of Monastir. The plan evolved in the Allied attack of September 1918 was to dislodge the Bulgars by a drive from the east. The French and Serbs on a 16-mile front worked their way through the mountains about Dobropolie to a depth of about five miles and took the ridge of the Sokol, Trnavska, Rovovska and Brazonsta. On 16 September a Jugo-Slav division occupied the Kosyak massif. The Tcherna River was reached on the 18th. Both Germans and Bulgarians began to give ground and by the 20th they were in full retreat, pursued relentlessly by Serbian cavalry. Greek and British forces east and west of Lake Doiran now created a powerful diversion by striking at the Belasitza ridge; at the same time the French sent a new force eastward. The fighting front now extended about 100 miles and over its entire length the enemy was in retreat. The French and Serbs had pushed the centre by 23 September about 40 miles to the region about Negotin and had cut the railway which afforded communication to the Bulgars falling back from Monastir and Prilep and those in retreat from Lake Doiran. The French threatened to turn the Babuna Pass by taking Vozarci and Kavadar. By 25 September the Allies held the entire Vardar Valley Railway from Gradsko to Ghevgeli. At the extreme eastern end of the front the Bulgars destroyed their stores and hastened to withdraw within their frontiers. The British followed closely, entered Bulgarian territory 26 September on the way to Strumnitza, and turned the flank of the Belasitza ridge from which the enemy at once retired. The Serbs and French turned the Babuna range with equal success and took Koprili (Veles) and Ishtip on the 26th. These advances threatened to cut off the first and second Bulgarian armies from the forces around Uskub.

Bulgaria was now beaten and angry with her allies who heeded not her demands for aid. She was especially angered at the Rumanian settlement and feared Turkish demands for territory. To end a situation fast becoming intolerable she sought a separate peace on 27 September, applying to the Allies for an armistice. The application was referred to Gen. Franchet d'Esperey, Allied commander at Salonica and successor of Sarrail. He refused to cease hostilities but agreed to receive properly accredited representatives. Bulgaria agreed to unconditional surrender and on 30 September her career as a belligerent ended under the terms of an armistice which secured Allied control of her territory. Uskub was at once entered by French troops and the Serb government proceeded to transfer thither its government from Corfu. Ferdinand of Bulgaria abdicated on 6 October and after a reign of six weeks Prince Boris left Bulgaria which on 4 Nov. 1918 was proclaimed a republic. Austro-German forces continued to offer small resistance to the Serbs and Allies in Serbia after the capitulation of Bulgaria. On 1 October Ferrero led his Italians against Berat. Italian and British warships raided Durazzo which was occupied by Italian troops on 15 October. The Serbs took Dibra, while the French took Prisrend and Mitrovitza. A small German force tried to hold Nish but the Serbs advanced rapidly and occupied it on 13 October. The Danube was reached by the Franco-Serb forces on 19 October and on 1 November the Serbs entered Belgrade. Serbia was liberated; her ancient enemy, Austria-Hungary, was fast crumbling away internally, and the age-old dream of a South-Slav state had become possible of realization.

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11. NAVAL OPERATIONS. Resources and Problems.— In the beginning of the World War Great Britain was the greatest sea power and Germany the second. As to what rank should be assigned to the navies of France, Italy, Russia and Austria-Hungary opinions differ. Taking the battleship as a means of comparison the available statistics would have ranged the great nations thus: Great Britain 60, Germany 33, the United States 30, France 22, Japan 15, Italy 11, Austria-Hungary 9 and Russia 7. In submarines the announced statistics were: Great Britain 75, France 64, the United States 30, Russia 30, Germany 27, Italy 19, Japan 13 and Austria-Hungary 6. So many of these boats were of old type that the statistics are not as valuable as they seem. The total tonnage of the British navy in 1914 was 2,714,106 and the tonnage of the German navy was 1,306,577.

In July 1914, 216 ships, about half the strength of the British navy, assembled in a grand review in British home waters and passed before the king. When the international situation became threatening the government, 26 July, ordered the fleet to remain assembled. The result was that when Great Britain declared war

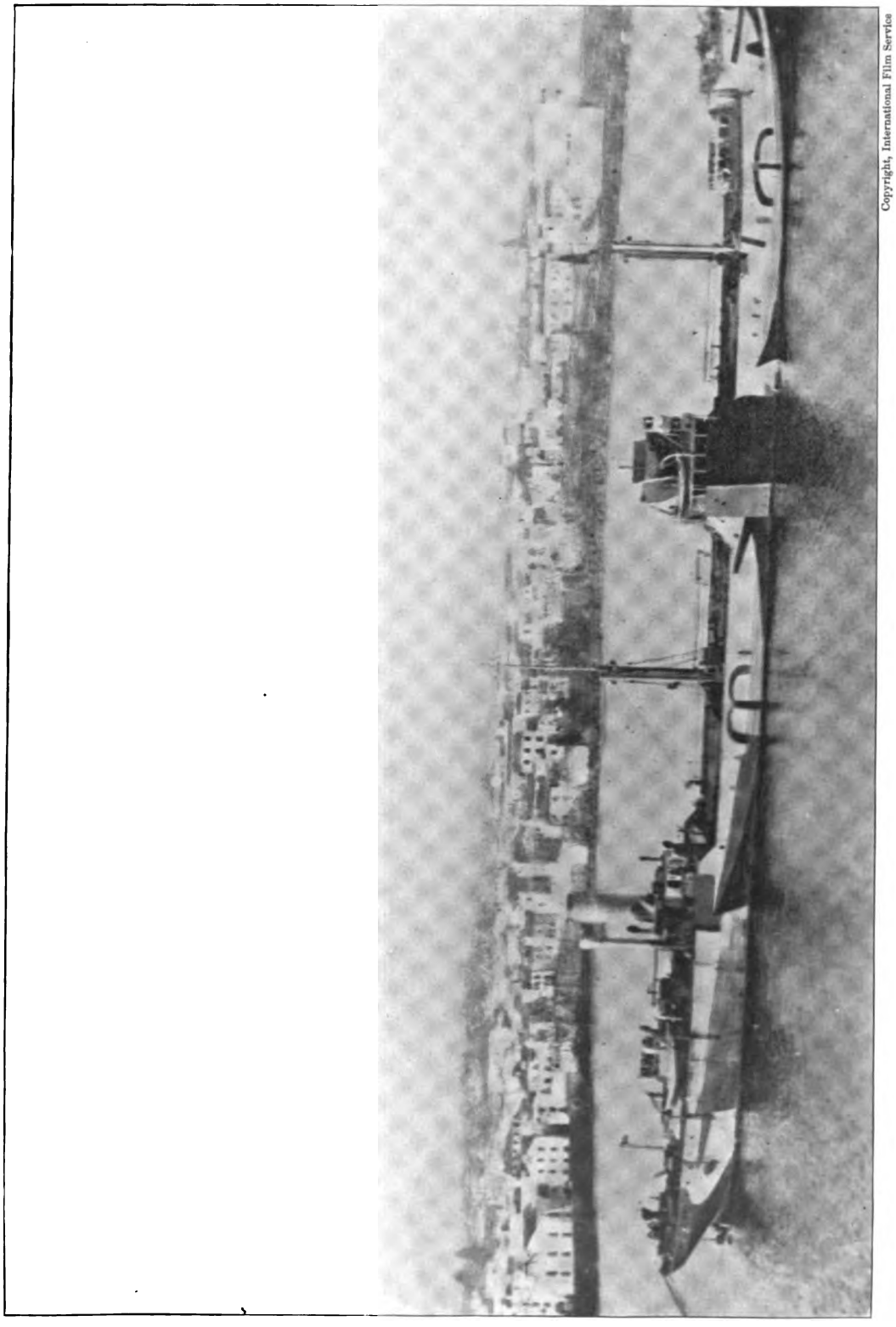
on 4 August, the vessels were at their assigned station, stripped for action and well supplied with stores. From that moment the ships disappeared, so far as the civilian population of Great Britain could see. Admiral Sir John Jellicoe, who had seen many years of service, was commander of the fleet and Mr. Winston Churchill was first Lord of the Admiralty. The French and Russian fleets were considerable, but they did not compare in strength with the British forces, which at once assumed the lead in the naval defense of the Allies. As Germany had the chief naval strength on the side of the Central allies, it was left mostly to the British fleet to hold her navy in check and to fight whatever battle would have to be fought against this great antagonist. The French fleet had its main naval base at Toulon, on the Mediterranean, and its chief duty would lie in that sea. Here, also, was the Austrian fleet, with its main base at Pola, on the Adriatic. It became the first purpose of the French fleet, with the help of such British ships as served in these waters, to keep the Austrians shut up in this port. Later on Turkey came into the war and it was necessary to see that her ships did not come out of the Dardanelles. On 24 May 1915, Italy entered the war against Austria-Hungary, and her fleet, which contained some excellent new ships, was a further aid in keeping the Mediterranean free of the ships of the Teutonic allies. As for Russia, her navy was divided into two fleets, each in a land-locked body of water. One was in the Baltic, the natural entrance to which, the sound, was treated as territorial water by Denmark and mined. The other was in the Black Sea, the entrance to which was closed by Turkey. With the aid of two strong German ships, the *Goeben* and the *Breslau*, the Turkish fleet was able to dispute the Black Sea with the Russian forces there. In the Baltic Germany was vastly stronger than Russia, so that she controlled the sea and maintained uninterrupted communication across it with Sweden and through Sweden with Norway.

These tasks were all of minor importance compared to that assumed by the British navy in the North Sea. This was a triple task. Primarily it was to watch for the German fleet, and encounter and defeat it if opportunity offered. It was also to establish and enforce such means of interference with Germany's foreign trade as would reduce her ability to carry on the war. When the British ships disappeared from view at the beginning of the war they were ranged in three fleets; the first, second and third. In each of them there were general squadrons of battleships, cruisers and destroyers, with submarines and mine-sweepers. The first fleet was made up of the most powerful ships, dreadnoughts, superdreadnoughts and powerful battle-cruisers. The three fleets taken together were called the Grand Fleet, or the Home Fleet, and it was cherished by the British people as the first line of defense. Outside of the North Sea when the war began were several fast German cruisers which started immediately to attack British merchantmen, and it became the duty of the British navy serving on the high seas to chase down and destroy these ships, or force them to intern in neutral waters. While on this service the British men-of-war also sunk German merchantmen, with the result that German commerce was driven from the seas. In the two first months of the war 10 per cent of the German and Austrian merchant ships were sunk at sea.

The German fleet was in an excellent condition. Most of the ships were modern and well designed. The service was organized in a spirit of democracy, the officers being taken for the most part from the middle class. German science had been employed freely in developing efficient naval mechanism, and the aptness of the Germans for seafaring life had made it possible to supply the navy with admirable sailors. The commander-in-chief, under the kaiser, was Admiral von Ingenohl, a man of recognized ability. At the head of the Navy Department of the government was Admiral von Tirpitz, a resolute man to whose devotion and energy the development of the German navy was chiefly due. His espousal of the cause of ruthless submarine warfare showed how little he valued humane feeling in war, but such a trait ought not to blind us to his merits an an organizer and administrator.

The actual presence of the British Home Fleet in the North Sea when war began made it necessary for the Germans to give up their long-cherished project of a quick raid in force on the coasts of Great Britain. It also forced them to keep themselves much in their own harbors. They hoped that the opportunity would come to sally out and crush their opponents when divided. For this purpose the Kiel Canal was well adapted. Its mouth was protected by mine fields and the well-fortified island rock of Heligoland. It formed a safe passage-way for the greatest ships into the Baltic Sea and permitted them to sally forth at will for any sudden attack that fortune might enable them to make. It was Germany's boast in 1914 that her navy would adopt a stay-inside policy until by single enterprises of fast cruisers and submarines, and by mines, she had reduced the opposing navy to a state of numerical equality and then her High Seas Fleet would go out and defeat its enemy in battle. It was an amateurish boast; for no trained naval man would have predicted that the losses would have been preponderatingly on the British side in the preliminary stage of picking off ships.

Fighting in Distant Seas.— The period of actual fighting was ushered in with a series of minor attacks, which seemed larger in the day of their occurrence than now. On 2 August a German cruiser bombarded the Russian port of Libau. On 5 August a British destroyer encountered the German mine-layer *Koenigin Luise* and sank her in six minutes, but the next day the light cruiser *Amphion* was sunk by one of the mines the *Koenigin Luise* had laid. Incidents like these, however, signified little in the general course of the war at sea. But a more important affair took place in the Mediterranean. When war began two German ships, the *Goeben*, a battle cruiser with a speed of 28 knots, and the *Breslau*, a light cruiser of equal speed, were off the coast of Algiers. They fired a few shots at the shore defenses and turned to escape through the Straits of Gibraltar but were headed off by British warships which chased them eastward. They outsailed their pursuers and on the morning of 5 August appeared at Messina, where the officers made their wills and deposited their valuables with the German consul, and then the vessels sailed



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Camouflaged Italian ship on the Mediterranean

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1 Firing an anti-aircraft gun aboard a sub-destroyer

2 Timing a depth-bomb

away, their bands playing 'Heil dir im Siegerkranz.' The *Goeben* and *Breslau* now turned toward Constantinople, where they arrived in a few days, eluding a British squadron sent to intercept them. These vessels played an important part in the train of events which brought Turkey into the war on the side of Germany. When Turkey openly made war on 1 November these two ships were taken into the Turkish navy, and renamed; they did much to keep the Russian fleet from dominating the Black Sea.

In the southern Pacific Ocean other work awaited the navies of the Entente. Here Germany held several island colonies, with a total area of about 100,000 square miles. To take this territory was especially desired by the inhabitants of Australia and New Zealand. Fitting out expeditions under the care of British and French warships they seized one possession after another, in general without serious fighting. On 28 August German Samoa was taken, on 11 September New Pomerania surrendered, on 13 September the Solomon Islands were taken over, and a few days later German New Guinea capitulated. Farther north the Japanese were carrying on the work of conquest at Shantung, completing the task on 10 November with some aid from the British navy.

More striking were the careers of the German cruisers *Emden* and *Koenigsberg*, which, stationed at Tsing-tau before the war, set out at once on careers as commerce destroyers. The *Koenigsberg* destroyed the *Pegasus* in Zanzibar Roads, on the east coast of Africa and then took refuge in the Rufigi River, hoping to escape the British cruisers sent against her. Her hiding place was discovered and after an eight months' blockade she was destroyed by monitors on 11 July 1915. The *Karlsruhe*, another raider, had a brief career of commerce destruction. Her fate was long in doubt but it has been agreed that she was wrecked in the West Indies. Two converted cruisers, *Prinz Eitel Friedrich* and *Kronprinz Wilhelm*, came to Newport News, Va., in the spring of 1915, after inflicting much damage on Allied commerce. The *Kaiser Wilhelm der Grosse* was sunk by the British cruiser *Highflyer* near the Cape Verde Islands. In December 1916, two German raiders, the *Möwe* and the *Seeadler*, got out to sea and did much damage to commerce. The first returned in a few weeks, but the second continued in the southern Atlantic and Pacific waters. She was finally wrecked at the island of Mophea, near Tahiti, in the south Pacific. Her crew escaped in a sloop to the Easter Islands, Chilean territory, and were interned until the end of the war.

The experiences of the *Emden* make a more dramatic story. She left Tsing-tau at the beginning of the war and joined a German squadron under Admiral von Spee in the southern Pacific. A few days later she was detached for separate duty and proceeded to the lanes of commerce off the southeastern coast of Asia. The consternation that ensued was like that created by the Confederate States raider, *Alabama*, during the American Civil War. In the course of two months the *Emden* captured 17 ships, most of which were sunk. The total loss amounted to several millions of dollars. Captain Mueller, her commander, proved himself a brave and resourceful man on many occasions. On one occasion he sailed boldly into the harbor of Penang flying a neutral flag, the ship disguised by the erection of a dummy fourth smokestack made of canvas. In the early dawn she entered the harbor unchallenged. A Russian cruiser was anchored by the side of the channel. Two torpedoes and several rounds of shell finished her. Observing that other ships were coming into the harbor Captain Mueller turned to escape. He encountered a French torpedo boat and sunk her with three broadsides. Picking up her survivors he hastened to the open sea, the whole affair having occurred within a half-hour. By this time all the Allied naval ships in the East were searching for the raider, and it was not safe for Mueller to remain in the ordinary sea lanes. Other dangers occurred also in the capture of the *Emden's* collier and supply ship in Sumatran waters. Standing out into the Indian Ocean she appeared on 9 November off the Cocos, or Keeling, Islands, 550 miles southwest of Sumatra. A party went ashore to destroy the cable and wireless stations. The operator managed to send a message, "Strange warship off entrance," which brought the Australian cruiser *Sydney* to the scene. Abandoning his shore party Captain Mueller tried to elude the *Sydney* in a running battle that had lasted less than two hours, when the *Emden* was forced on a reef in a sinking condition, her decks covered with dead and wounded. Captain Mueller was taken prisoner along with the other survivors. In her hasty departure from Keeling Island the *Emden* abandoned her landing party, headed by Lieutenant Mücke. The series of events which marked the homeward journey of this party make one of the most exciting stories of the war. Their first action was to fortify themselves and proclaim martial law. Then fearing the *Sydney* would return and make them prisoners they took possession of a small schooner and set sail for the Sumatran Coast, where the Dutch authorities gave them scant welcome and sent them on their way with few supplies. Turning prow westward they finally encountered a small German trading vessel, which was still dodging the British and Japanese patrol on the Asiatic Coast. She took them on board and landed them in Arabia at Hodeidah on the lower part of the Red Sea. They tried to cross the desert to Medina but were opposed by Arabs and forced back to the sea. After many adventures on native boats and fighting against the Bedouins on the shore they at last reached El Ula on the railroad that ran south from Damascus and were thus able to reach Germany by way of Turkey after five months of wandering. Lieutenant Mücke's exploits in this long trip made him a hero in his own country and won the admiration of many people of other lands.

When the *Emden* set out on her career as a raider she was detached from a German squadron in the Pacific commanded by Admiral von Spee, and bound for the western coast of South America to destroy such Allied merchantmen as it encountered. Two large and fast armored cruisers, the *Gneisenau* and *Scharnhorst*, and three fast light cruisers, the *Dresden*, *Leipzig* and *Nürnberg*, composed the squadron. They found such a welcome in

the harbors of Colombia and Ecuador that the British government made emphatic protest to the governments of these countries against the violation of neutrality. Passing down the coast von Spee came to Coronel, a few miles south of Concepción, Chile. Here on 1 Nov. 1914 he encountered a British squadron under Rear-Admiral Sir Christopher Cradock, sent out to protect the trade routes on the two sides of the southern part of South America. The British squadron consisted of two armored cruisers, the *Good Hope* and the *Monmouth,* a light cruiser, the *Glasgow,* and an armed liner, the *Otranto.* In armament the British ships were inferior, but in speed were superior to the Germans; and Admiral Cradock would have been justified in avoiding an engagement. But he chose to accept battle and allowed the Germans to take position to his east, so that his ships were clearly outlined for the Germans against the long afterglow of the sunset sky. In two hours the *Good Hope* and the *Monmouth* had gone down with their crews, including the commander of the squadron. The *Glasgow* and the *Otranto* had been ordered to fall out of line before the battle and escaped to safety. The conflict was really a duel between two British and two German armored cruisers with the advantages of speed, range of guns, thickness of armor and atmospheric conditions in favor of the latter. Probably Admiral Cradock was to blame for failing to recognize these facts. The battle seems to have gone against him from the beginning; for von Spee got the range first and damaged the best guns of the *Good Hope* before they could be brought into action.

The news of the engagement seemed to show the superiority of German ships and officers, and the pride of the British was touched to the quick. Immediately a squadron of superior strength was sent out under Rear-Admiral Sturdee, consisting of two battle cruisers, the *Invincible* and the *Inflexible,* armed with 12-inch guns and capable of a speed of 28 knots, and three armored cruisers, the *Carnarvon, Kent* and *Cornwall.* With the *Glasgow* this squadron was in the south Atlantic by the end of November, whither von Spee had come to escape the Japanese, who were combing the Pacific to discover his whereabouts. By a ruse Rear-Admiral Sturdee enticed him to the Falkland Islands and met him there when he arrived on the morning of 8 December. He came expecting to find an unsupported British warship which was to become an easy prize. To his surprise he saw a superior squadron steam out of a landlocked harbor and fled, Sturdee coming close behind him. At 2 P.M. the British battle cruisers had the range and opened a deadly fire. Von Spee realized that the game was up and turned to fight for his life. The *Scharnhorst* and *Gneisenau* were opposed by the *Invincible,* the *Inflexible* and the *Carnarvon* and sank, the first at 4 P.M. and the second at 6 P.M. The light cruisers, the *Nürnberg,* the *Leipzig* and the *Dresden* did not stand for the battle but turned southward, pursued by the *Kent,* the *Glasgow* and the *Cornwall.* By 9 P.M. the first and second were below the waves, but the *Dresden* managed to escape in the night. She was sought relentlessly and finally discovered and sunk by the *Kent* and the *Glasgow* on 14 March 1915 at Juan Fernandez. In the battle of the Falkland Islands the Germans, like the British at Coronel, fought bravely against a superior force and went down with their ships. But in one respect there was a difference: At Coronel the victors were unable to save any of the defeated crew from the water because of a very heavy sea; at Falkland Islands the victors gave themselves to saving life as soon as the defeated enemy vessel hauled down their ensigns. Unfortunately it was a difficult matter. The British sailors did what they could by throwing ropes, logs of wood and mats to the Germans in the sea. But the water was icy-cold and many of the unfortunate ones became numb and relaxed their hold before they could be reached. It is reported, also, that many were attacked by the albatrosses who picked at their eyes. While they fought off these vultures, numbed hands lost their holds and the victims slipped off and were lost. About 200 men were rescued from the waters, but Admiral von Spee and two of his sons were lost. As at Coronel no ship on the victorious side was damaged and but few men were lost.

Standing Guard in the North Sea.— Although the encounters in remote seas were the most striking thing the belligerent navies were doing in the first months of the war, the work of most importance was keeping the German High Seas Fleet blocked up in German harbors. For this purpose the British fleet kept constant station. It had to be ready for sudden attacks, sweep up German mines continually and lay mines of its own, and be always on the lookout for submarine attacks. All this was hard work, and few people realized its extent and labors.

Most people in the Entente countries expected a great battle for supremacy, and it is probable that many Germans entertained the same expectation. In fact, it was part of the policy of each side to entice the fleet into battle, either in small encounters or in large engagments, the Germans by raids or by setting traps in which they might throw a superior force against some part of their opponents' fleet. In general the Entente Allies were content to play a waiting game, but at times they tried to draw their enemy out of his mine-protected harbors by sending forward weak squadrons in the hope that they might precipitate a fight and maintain it until the main British fleet came up. Several isolated achievements marked the first work of this war, the majority being favorable to the Germans. On 3 September a German mine destroyed a gunboat, the *Speedy,* in the North Sea. On the 5th the light cruiser *Pathfinder* was torpedoed by a German submarine off the Scottish Coast, an exploit for which the Germans paid on the 13th when their light cruiser, the *Hela,* was destroyed by a British submarine in the North Sea. On the 22d three British cruisers were patroling the Dutch Coast when one of them, the *Aboukir,* was torpedoed and began to sink. Her companions, thinking she had struck a mine, came up to save the crew. First one, the *Hogue,* and then the other, the *Cressy,* was torpedoed, with the result that all were lost with 680 out of a total of 1,459 officers and men. However, none of these affairs had important influence on the progress of the war.

Few large-scale naval actions were fought

during the war, but one occurred on 28 August in the Bight of Heligoland, and it is typical of the battles in which each side sought the advantage of numbers, with the result that the Germans drew off when it seemed that they would be brought into a general engagement with the British High Seas Fleet. The battle was planned by the British authorities to get an opportunity to overwhelm the Germans. Having reconnoitred the waters around Heligoland they sent out on the 27th a submarine flotilla to serve as scouts. Next day they sent forward two destroyer flotillas, followed by a battle cruiser squadron, a cruiser squadron, a light cruiser squadron, and all to rendezvous before Heligoland in the morning of the 28th. The submarines with two small destroyers in attendance arrived in front of Heligoland early on the 28th and revealed themselves. Behind them, but out of sight were the other squadrons. The German ships, according to their custom, were behind the island, but seeing the submarines they came out, thinking to make an easy capture. Then followed a sharp battle between two of the British cruisers that quickly arrived and two German cruisers and some destroyers. It developed into a duel between the opposing cruisers, in which the Germans got the worst of the encounter. Meanwhile the heavier British ships were out of sight, and the Germans sent out two additional cruisers, recalling one of the first in the fight because of her severe damages. This led the British to call for help, and about noon Admiral David Beatty arrived with a squadron of five battle cruisers. He found two British light cruisers, the *Arethusa* and the *Fearless*, heavily engaged with two German light cruisers, the *Mainz* and the *Köln*. About the same time two other British light cruisers, the *Falmouth* and the *Nottingham*, arrived and joined in the battle. Beatty might well have suspected the Germans of a ruse by which, if he stood to fight, he might have suddenly found himself confronted by the superior German fleet. But putting aside any such doubts he went boldly into the battle, where his 13.5-inch guns soon settled the fate of the *Mainz*, the *Köln* and the *Ariadne*. This done he steamed away for home ports, accompanied by the remainder of the expedition. The net result was the destruction of three German light cruisers, the serious damaging of another and the destruction of one destroyer and the serious damage of seven others. The British set the stage for the battle of Heligoland and fought it according to their plan. Their lighter craft were sent forward to engage the enemy in the hope that he would be drawn out in such numbers that the superior British ships could cut them off. The Germans did not send out their heavy ships and lost those they sent. They were at a disadvantage in the engagement; and even their opponents bore witness to the courage and skill with which they fought their ships, staying by them to the last and going down when they sank. No British ship was sunk, and but one, the *Arethusa*, was badly damaged.

The next naval event of importance in the North Sea was a German raid on Yarmouth, 2 Nov. 1914. Three German battle cruisers, two armored cruisers and three light cruisers composed the raiding party. They appeared before Yarmouth at eight in the morning and bombarded the place for 15 minutes at a 10-mile range. Little damage was done because of the long range, and on their return to Germany one of the armored cruisers, the *Yorck*, struck a mine and sank. The purpose of the expedition seems to have been to see if such could be made. From the accounts in the British newspapers the German authorities had a good opportunity to see the effects and to observe in what manner the next attempt could be made an improvement.

The next attempt came on 16 December with a squadron of three battle cruisers, and one armored and one light cruiser under Rear-Admiral Funcke. The expedition reached a point off the coast of England north of Flamborough Head, Yorkshire, in the early morning, the weather being foggy and cold. Dividing into two columns, one proceeded to attack Scarborough and Whitby and the other attacked Hartlepool. At Scarborough the town was shelled for 45 minutes. Many shells were fired at a wireless station in the suburbs, but many others were sent without discrimination into the thickly populated residential sections. Churches, hotels, the gas-works, the waterworks, and whatever building was large enough to attract attention became targets. Nor could the attackers plead inability to distinguish objects from a distance; for the shots were directed as much into the residential district when the ships were but 500 yards from the shore as when five miles away. Eighteen persons were killed, most of them women and children, and about 70 were wounded. Passing north the column steamed past Whitby firing all the time and killing five and wounding two persons. The second column opened fire on Hartlepool about eight o'clock. A small gunboat and two destroyers in front of the place were forced to flee from a vastly superior attacking force. A small fort with antiquated guns stood in front of the town, garrisoned by some Territorials, who manned the guns and returned shot for shot, but without effect. One of the attacking ships gave her especial attention to this battery. The other made an indiscriminate attack on the civilian portion of the town. The gas-works were destroyed, one of the shipbuilding yards was damaged, churches, schools and hospitals were hit, and the streets were severely damaged. The killed numbered 119 and the wounded more than 300. Among those injured were several children on the way to school.

These attacks were evidently made to strike terror in the minds of the British people. They had another effect. To shoot down old men, women and children was horrible and exasperating to the British, who have ever prided themselves on their humanity for the defenseless. The story of the attacks of 2 November and 16 December stimulated the war spirit in Great Britain and promoted volunteering. It was an argument for war that the most ignorant could understand. Of the four towns assailed in these two raids, only one, Hartlepool, had fortifications of any kind, and the old fort at that place was inconsequential. In delivering the assaults the Germans, who must have known the conditions on shore, showed no desire to distinguish between public losses and losses to be inflicted on private individuals.

The raids were hailed as deeds of heroism

in Germany, as in fact they deserved to be hailed, in so far as it was not concerned with the attacks on civilian non-combatants. The British fleet was keeping a most careful watch, with plans made to destroy whatever German naval force should emerge from the protected areas of their foes. To sally forth and take a turn in the very centre of the enemy's waters was a courageous deed. The second raid came near being a perilous one; for the British fleet was prepared for such an attack and instantly set out to trap the raiders. As the British came within eight miles of them the fog intervened and gave the Germans an opportunity to escape unscathed.

On 24 Jan. 1915, Rear-Admiral Hipper with three battle cruisers, six light cruisers and a flotilla of destroyers set out from Wilhelmshaven to make a third raid. The British navy seems to have had an intimation of what was coming. That morning Vice-Admiral Beatty with six battle cruisers, four light cruisers of the "town" class and three others, and a number of destroyers steamed out into the North Sea. About 7 A.M. the Germans were sighted off the Dogger Bank and turned to flee. The British pursued and having faster ships overhauled them, running, not behind their enemy, for fear of mines, but on a parallel course Soon after nine the interval was 10 miles and Beatty, who led in the *Lion,* opened fire. One of the German battle cruisers, the *Bluecher,* had a speed of only 24 miles and began to fall behind, and her fate was soon sealed. As the pursuing ships overhauled the *Bluecher* each took shots at her. Finally a torpedo struck her in a vital part and she turned over and sank. Her crew jumped into the water and boats from a British crusier began to rescue them, when German aircraft appeared and dropped bombs, probably under the impression that it was a British vessel that was sinking. Meanwhile Beatty's flagship, the *Lion,* was damaged by a shell so that it had to abandon the fight. He transferred his flag to a destroyer and afterward got aboard a battle cruiser, but for a time the command was with Rear-Admiral Moore, who decided that it was better to cut short the pursuit. He had come within 70 miles of the Germän mine-fields and believed that Admiral Hipper was trying to lead him into a trap. The escape of the Germans was a great disappointment to the British. In the fight off the Dogger Bank all the advantage of weight, range and speed was against the Germans. The British people, who naturally wanted striking results, thought Hipper should have been surrounded and crushed; but prudence directed that the best ships of the British for speed and offense combined should not be placed too near the mine-fields. The Germans lost the battle cruiser, *Bluecher,* and had two other battle cruisers seriously damaged. The British lost no ship, but the *Lion* was so badly damaged that it was necessary to tow her, and it was with difficulty that she was taken into a home port. Soon after this battle the German government removed Admiral von Ingenohl and gave the command of the fleet to Admiral von Pöhl.

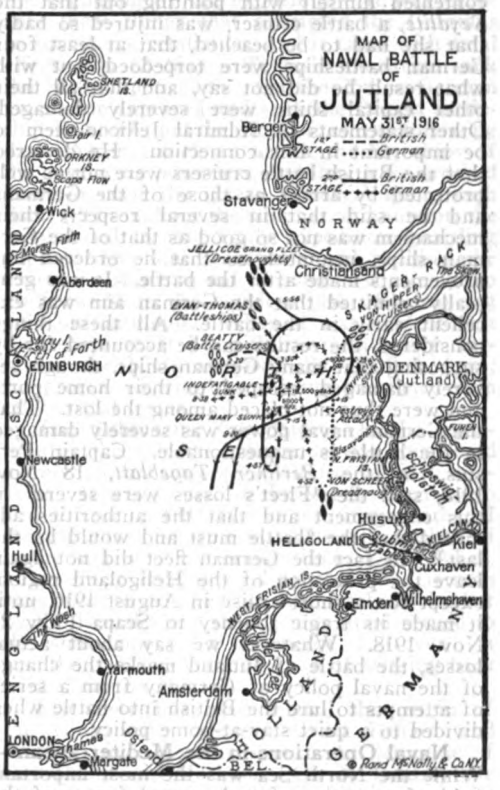
Now there followed a year in which the two fleets had no encounter, the Germans showing themselves still unwilling to come out for battle. As to what efforts the British made to draw them out it is impossible at this time to make a statement. During the interval the enforcement of the blockade of German ports, fighting the submarine by the British and French in the Atlantic, and by the same powers in conjunction with the Italians in the Mediterranean, were the chief features of naval activity in the World War. These were important events and will be taken up in the proper place. It was not until the Battle of Jutland, 31 May 1916, that the world had another opportunity to note a measuring of strength between the two hostile fleets in the North Sea.

On 30 May the British fleet sailed from its bases on one of its ordinary cruises through these waters. The evidence seems to show that the German fleet was in the habit of making short sallies into the same region, passing through their mine-fields into the region north and west of Heligoland. These sallies were usually made at such times that they did not coincide with the presence of the British in the same waters. But on the cruise of 30-31 May it was the fortune of the two fleets to meet off the coast of Jutland, which forms the western peninsula of Denmark. The British fleet was sailing in two divisions. One was composed of battle cruisers chiefly, but it also contained a squadron of the largest battleships with an enveloping flock of light cruisers, and it was under the command of Admiral Beatty. The other was composed chiefly of battleships, it also contained a squadron of battle cruisers with light cruisers and was under command of Admiral Jellicoe. The two divisions steamed across the North Sea on the morning of 31 May, Beatty taking a course along lat. 56° 30′ and Jellicoe along the parallel of 58°. At noon Beatty, finding himself within 50 miles of the coast of Jutland, turned sharply northward and expected to join Jellicoe. The weather was calm and hazy and the sea was as smooth as a pond. At 2:20 P.M. the British light cruiser, *Galatea,* proceeding on Beatty's eastern flank, signaled "enemy vessels to the east" and five minutes later repeated the information with the statement that the vessels were numerous. The enemy was sailing southward, and Beatty altered his course to south-southeast, intending to get in between him and the base at Heligoland. At the same time he sent out a seaplane which reported at 3:30 P.M. the presence of the German cruiser squadron, consisting of five battle cruisers with the usual number of attendant cruisers and destroyers. Beatty was in slightly superior force and placed his ships in battle line at once and fighting began at 3:48 P.M. He did not doubt that the heavy German fleet was somewhere to the southward, while Jellicoe was two and a half hours away in the north. But he was looking for the German fleet and had found it, and he did not hesitate a moment. It was his duty to engage the Germans, even though the two divisions united against him, and to hold them in their position if possible, until Jellicoe arrived and gave them the benefit of his heavy armaments. It was certain that Beatty would place his ships in a precarious position for the time being, but he would have to endure it until reinforced. The engagement began when the two divisions were both sailing southeast, the range being 18,500 yards, about 10½ miles.

The first stage of the battle lasted an hour,

during which the firing was constant. It was difficult to determine what damage was done to the Germans but the British lost two battle cruisers, the *Indefatigable* and the *Queen Mary*. The German aim was excellent in this part of the engagement. Beatty had sent his light cruisers ahead and at 4:42 P.M. they reported that the German battle fleet, under Admiral von Scheer, was at hand. To run in to its iron embrace was more than he bargained for and he turned backward, hoping to draw the combined fleet toward Jellicoe. The running fight that followed as he fled made the second stage of the battle. As it progressed the weather became misty, which was bad for the British. Being to the westward of their foes and near sunset their hulls were visible to the Germans, while the mists obscured the latter. At 5:50 P.M. Jellicoe's battleships were sighted, and half an hour later the engagement had entered its third stage, in which the combined British fleet was in contact with the combined German fleet. Admiral Hood in the *Invincible* led the third battle cruiser squadron and wheeled into line, bringing himself into range of 8,000 yards from the enemy. He was instantly covered with an intense fire from many kinds of ships of war. In a few minutes the *Invincible* blew up, probably because her magazines had been reached by a German shell. Admiral Hood perished with the ship. Other casualties occurred as the ships of Beatty and Jellicoe performed the delicate operation of forming in one battle front under the fire of a strong and skilful enemy. But the work was done and at 6:50 P.M. the united British fleet formed one long line, parallel to the enemy's line, which it overlapped because of its superior strength. Both fleets were steaming southward, it being the intention of the British to head the Germans off from their bases.

The moment was now dramatic for the two navies. For years officers and men had looked forward to the day when the strength of one should be measured against the strength of the other, and here side by side off the shores of Jutland were the majority of the capital ships of each nation hard at work, one against the other. More than two hours of daylight was to be expected in this latitude, and no British sailor present thought that many of the Germans would be afloat when it ended. But here came one of those unexpected turns of the weather which so often favored the Germans on land and sea. The mists thickened and fell down on the surface so that distant objects were no longer visible. Frequently it became so thick that German ships were lost altogether. Its effects were heightened by German smoke screens. Under these conditions a squadron of British cruisers ran between the German and British battleships, which were actively engaged, and only got out with severe losses. In the third stage of the battle the main purpose of the Germans was to escape, but the British had worked around them and stood between them and Heligoland. The closing down of the mists broke up formations and the action resolved itself into a series of small engagements, the Germans using every opportunity to slip away in the obscurity. Nor was it possible to see how much damage was done to them. In the half-light a ship would be seen to be hit or on fire and she would drop out of line, but it was impossible to determine how seriously she was damaged. Darkness came about 9 P.M., and throughout the first half of the night intermittent outbursts of firing broke the stillness. During this period the British had reason to beware of submarines, but the destroyers were deployed successfully, all the time the fleets steaming southward. At dawn on 1 June the British fleet was 100 miles north of Heligoland, but the Germans had disappeared. Jellicoe and Beatty lay in position until 11 A.M. awaiting the appearance of the foe, and when he did not come they slowly returned to British ports. They had met the enemy and fought him in hard battle in which he had escaped severe losses only by reason of the mists and the arrival of darkness.



When the world received its first news of this battle it received it by way of Germany, and it was represented as a German victory. "The gigantic fleet of Albion, ruler of the seas," said the kaiser, "which, since Trafalgar, for a hundred years has imposed on the whole world a bond of sea tyranny, and has surrounded itself with a nimbus of invincibleness, came into the field. That gigantic Armada approached, and our fleet engaged it. The British fleet was beaten." The Germans announced their own losses as one old-type battleship, the *Pommern*, three small cruisers, *Wiesbaden*, *Elbing* and *Frauenlob*, and five destroyers. Later they admitted the loss of a battle cruiser, the *Lutzow*, and a light cruiser, the *Rostock*, concealed at first "for political reasons." Against these acknowledged losses were the undisputed

British losses of three battle cruisers, the *Queen Mary, Indefatigable* and *Invincible,* three armored cruisers, *Defence, Black Prince* and *Warrior,* and eight destroyers, which in tonnage was nearly double the tonnage of the ships mentioned by Germany. Admiral Jellicoe reported that there was every reason to believe the enemy had lost three battleships, one battle cruiser, five light cruisers, six destroyers and one submarine. He based his opinion on testimony taken from his officers and carefully compared. But in his memoirs, published in 1919, he did not repeat this statement. In fact, his general testimony of the low visibility during the action, due to the mists and smoke screens, goes far toward discrediting reports of losses his own officers thought they observed in the moment of battle. In his later account he contented himself with pointing out that the *Seydlitz,* a battle cruiser, was injured so badly that she had to be beached, that at least four German battleships were torpedoed, but with what result he did not say, and that all their other capital ships were severely damaged. Other statements by Admiral Jellicoe seem to be important in this connection. He declared that the British battle cruisers were not as well protected by armor as those of the Germans and he said that in several respects their mechanism was not so good as that of the German ships, insomuch so that he ordered improvements made after the battle. It was generally admitted that the German aim was excellent early in the battle. All these things considered, the results can be accounted for by supposing that many German ships, though severely damaged, escaped to their home ports and were thus not placed among the lost. That the German naval power was severely damaged in the battle is unquestionable. Captain Persius, in the *Berliner Tageblatt,* 18 Nov. 1918, said the "Fleet's losses were severe" in this engagement and that the authorities admitted that the "battle must and would be the last." In fact the German fleet did not again leave the protection of the Heligoland region, except for a short cruise in August 1916, until it made its tragic journey to Scapa Flow 21 Nov. 1918. Whatever we say about actual losses, the battle of Jutland marks the change of the naval policy of Germany from a series of attempts to lure the British into battle when divided to a quiet stay-at-home policy.

Naval Operations in the Mediterranean.— While the North Sea was the most important field of operations for the naval forces of the Entente Allies, the Mediterranean Sea was not without significance. Here the Austrian fleet had its base, and it was necessary to keep it bottled up in its Adriatic harbor; for if it came out it would have menaced French and Italian communication with Africa and British communication with Egypt, East Africa and India. To keep these fleets in harbor the Allies had the French fleet and such ships as Great Britain could spare from service in the North Sea and from the work of chasing down the few German cruisers that raided their commerce in the beginning of the war. After Italy came into the war against Austria-Hungary, 23 May 1915, her navy gave assistance in this service. The blockade was effective from the beginning. At no time did the Austrians, in whose navy were several modern battleships, dare risk battle in the open sea. As for the Turks, with the German battle cruiser *Goeben* and the light cruiser *Breslau* added to their originally trivial fleet, they did not dare risk battle on the Mediterranean but were content to make raids against Russian ports on the Black Sea. Even in this service they were not successful; for the *Goeben* received serious damage in a fight with Russian warships off the Anatolian Coast, 18 Nov. 1914. By this time German officers were in control of the Turkish navy and the *Goeben* was repaired and sent out to raid the oil port of Batum, 10 December, but the Russian squadron drove her back to Constantinople forthwith. By reason of the strength of this squadron the control of the Black Sea was in Russian hands throughout the war. Thus shut up in their harbors the allies of Germany were forced to confine their naval efforts to submarine warfare, of which more anon.

Meanwhile the British admiralty, under the leadership of Mr. Winston Churchill, launched the attack on the Dardanelles, which began as a naval affair. The controversy respecting this attack has engaged the pens of many critics, none of whom have so far been able to show that the step was wisely taken. Constantinople is 175 miles from the Ægean Sea, the approach being first by the Dardanelles, 50 miles, thence across the Sea of Marmora, 115 miles, and thence up the Bosporus 10 miles. The first of these passages varies from three-quarters of a mile to five miles wide. The shores of the straits are generally high and forts and batteries were placed at favorable points. The narrowest part, called the Narrows, is 14 miles from the entrance. The main defenses were here, although there were strong forts at the entrance. The current in this part of the straits was strong, reaching four knots an hour when the wind favored, and it enabled the Turks to send down drifting mines with serious effects. For the military capacity of the Turks the British and French authorities had little respect, and the British thought in the autumn of 1914 that it would be easy to force the Dardanelles and hold the entire passage to the Black Sea. If that could be done the vast stores of grain in southern Russia would be delivered to the hungry Allied peoples, and the moral effect would be good upon Bulgaria, Rumania and Greece, who still hesitated between neutrality and actual support of Germany. The French and British did not take into account the great change the Germans had made in the Ottoman army. Under General Liman von Sanders it had been reorganized and drilled into an excellent defensive force with more than 200,000 men in the capital. German engineers had repaired the forts along the Dardanelles, mounted improved Krupp cannon and had trained men to serve them under the direction of German superior officers. More than this, an ample supply of munitions was accumulated in Constantinople, carried thither by means of the railroad through Rumania and Bulgaria. These forts, strongly held and defended, would have to be demolished before the Allied fleet could appear at Constantinople, where, it was believed, the terrified Turks would immediately sue for mercy. All this was to happen through

the sole efforts of the navy, without the co-operation of even a moderate land force. The scheme seems to have originated with Mr. Winston Churchill, First Lord of the Admiralty, who was sure of its feasibility. It appears, moreover, that no technical navy man ventured to point out how difficult it was to destroy strong and well-defended land batteries with naval artillery.

The attack began on 19 Feb. 1915, and lasted until the middle of April. It falls into three periods: first, the attack on the outer forts, at the entrance of the straits; second, the attack on the Narrows; and third, the period of desultory fighting that followed before the attack was renewed as a land attack with naval co-operation. During the first phase affairs progressed favorably. It was opened 19 February by five British and three French battleships, covered by destroyers, the chief command being with Vice-Admiral Carden assisted by Rear-Admiral Guépratte. After a day's bombardment the Turkish forts were still firing, but the work was renewed on the 25th, after an interval of bad weather. In this day's business the British used the super-dreadnought, *Queen Elizabeth,* just from the hands of the makers, whose eight 15-inch guns made her, with her four companions of the same class, the most powerful fighting engines on the seas. The result was to prove eventually that she had her limitations when fighting against land defenses. But her service was good on the 25th and at the end of the day the outer defenses of the Dardanelles had been silenced. On the 26th the mine-sweepers were sent into the straits and cleared the waters so that several of the attacking ships went in and bombarded the works along the banks and below the Narrows.

To the people at home it seemed that the task of forcing the straits had begun auspiciously; but the main Turkish defenses at the Narrows had not been reached. When the attacking battleships approached this position they were in a restricted channel and not able to lie dispersed as when they were on the Ægean. They were also in the current, and thus huddled together invited attack by drifting mines. On 6 March the approach on the Narrows began, and in five days the fortifications just below them were reduced. On 18 March came the main assault. Sixteen battleships, one of them the *Queen Elizabeth,* were sent into the straits, and a concentrated fire was poured upon the forts on each side of the position. After an hour and a half these did not return the fire. It was concluded that they were destroyed, and a squadron was ordered forward, when all the forts reopened fire. At the same time it was discovered that the current was full of drifting mines, loosened by the Turks at this opportune time when they could hardly fail to find victims. First sunk was the French battleship *Bouvet.* An hour and a half later the British battleship *Irresistible* was struck by another mine and sank. Later on the *Ocean,* another British battleship, encountered a mine and sank in a few minutes. At sunset the commanders were forced to admit failure and withdrew from the straits. They did not renew the attempt in the same manner, but for a month kept up desultory attacks on such forts as were within range from the Ægean and the lower reaches of the Dardanelles. The navy had tried its hand and failed because the task was beyond the power of the navy. The next turn was the army's.

In the later stages of the fighting at Gallipoli the navy rendered important aid in shelling the shore to protect land operations and in sending submarines into the Sea of Marmora to demoralize the Turkish communications. Of the latter kind of activity were the achievements of the submarines E-11 and E-14, which dived under the Turkish mines and into the Sea of Marmora, sunk three gunboats, three transports and three store ships, and forced the commander of the Turks to bring up his supplies in a roundabout way on the Asiatic side of the straits. An Australian submarine, the AE-2, which attempted a similar work, was sunk in the beginning of the expedition. It was probably these things that prompted the Germans to submarine retaliation, and it came with fatal effect. On 12 May a Turkish submarine sank the battleship *Goliath.* On the 26th a German submarine appeared and sank the British battleship *Triumph,* and the *Majestic* on the following day. Against such an attack the big ships of the navy were powerless, and they were ordered home at once, the *Queen Elizabeth* going with them. Throughout the summer and autumn the navy stood by the futile expedition guarding supply boats and transports and shelling the enemy on shore in aid of some new attempt to go forward in the hopeless task of advancing on Constantinople. When it was evident that the troops must be withdrawn the navy furnished the boats and skilfully handled them; the process of withdrawal being completed with only trivial losses.

The Submarine Campaign.— In the beginning of the war the submarine was considered mainly an instrument of offense against warships. It was so used in the war between Japan and Russia in 1904 and in the first months of the war the submarine was generally spoken of in the same way in German discussions. When, however, it became evident that the German navy was to be shut up indefinitely in harbor by the British fleet, the German mind turned to the submarine as a commerce destroyer. It was the one way Germany had of striking back in the war on the sea.

Elsewhere has been related the origin of the controversy between Great Britain and Germany over the extension of the definition of contraband and blockade. On 26 January the German government took over all the corn and flour in the empire, thus making grain a munition of war. England began at once to seize it as contraband. Germany hastened to declare that she would not use imported grain for military purposes, but that did not change matters, since imported grain only took the place of domestic grain that went to the army. The next step was a notice from Germany that after 18 Feb. 1915, the waters around the British Isles would be held an area of war in which enemy merchantmen would be destroyed by submarines. It was a recognized rule of international law that a cruiser might sink an enemy merchant vessel if it was impossible to put a prize crew aboard and send her to port, but that in such cases the crew and passengers must be placed in safety. Nothing was said to imply that the

vessel must not be sunk if the crew and passengers were not saved, since it would always be possible to save them on a cruiser. As regards the submarine the case was otherwise. It could not take such persons aboard, and in many cases the attack to succeed must be so quick that it would not be safe to wait while boats were being manned. In the absence of any rule on the subject Germany undertook to make her own rule, and it was wholly in her favor. She torpedoed enemy merchantmen on sight, without warning or waiting to allow the lowering of boats. Declaring the British ports blockaded by submarines, she claimed the right of sinking neutral ships found in the forbidden waters, without examining their papers to see whither they were bound or what they carried. The submarine was a new instrument in warfare, and it was to be expected that Germany would desire some kind of a modification of the rules of naval warfare in regard to its use; but the position she took transcended the ordinary concept of blockade as much as it violated the sense of humanity which is fundamental to the progress of international law.

In the long war that now began between the submarine on the one hand and the naval forces of the Entente Powers on the other Germany and Austria scored their best success at sea. They had found a weapon that their enemies had great difficulty in parrying, and they improved it greatly during the war while they used it most assiduously. It was a difficult warfare to follow, partly because the encounters were isolated and unrelated to one another, and partly because it was the design of each side to keep secret the methods of attack as well as of defense.

Germany's first submarine decree took effect on 18 Feb. 1915. Before that date she had sunk several merchantmen of the Allies, but now sinking became a regular thing. By 31 March she had destroyed 28. Since the British Isles produced but a small portion of the food and raw materials they used, it was Germany's purpose to cut off their commerce and force them to make peace or starve. The small proportion the destroyed ships bore to those that came and went showed how inconsiderable was the strain put upon British industry. On neutrals the effect was more serious, since it was for them a matter of principle. Holland, the Scandinavian countries and Spain bore the affront with as good grace as possible; for they were too weak to challenge the actions of the great German empire. But all eyes turned to the United States, the one neutral in the world strong enough to dispute Germany's pretension to modify international law. The action of that power, however, was limited by the conduct of the Entente Allies who had also overstepped law in their blockade, their wide extension of contraband, and their interruption of American trade with the neutrals in northern Europe. Between the two infractions of international law stood the United States. If they declared war on either nation they would by that act become the supporter of the other. It was a difficult choice; but most Americans felt that if the time came when it must be made the only possible thing would be to oppose the nation that killed American citizens, even women and children, ravaged Belgium, introduced poison gas in warfare, and stood for the domination of the world by a strong military autocracy. German statesmen took no notice of this feeling. They considered the United States an unwarlike state and a negligible quantity in the war. Meanwhile President Wilson's policy was to avoid war, if possible. Many a time an American President has found himself in such a position as to demand that he exert himself to hold back the popular feeling for war until the resources of diplomacy are exhausted, and in fulfilling such a duty he has become unpopular. In the situation before him Mr. Wilson tried to induce Germany to bring her conduct within the international law rule of cruiser warfare.

The attack on the *Lusitania*, 7 May 1915, made it hard to restrain public opinion, but the President's course was firm and diplomatically courteous. It took three notes to convince the German government that it must take cognizance of American public opinion. The first indication of a tendency to yield was late in May, when Berlin gave notice that reparation would be made for the destruction of the *Gulflight*, an American ship which Germany now admitted was attacked by mistake. Unluckily for her purpose this disclaimer was followed close by the news that the *Nebraskan*, another American ship, had been sunk under circumstances equally exasperating, and in respect to this affair Germany was forced to send another apology and offer of reparation. As to the main point of contention, the destruction of Americans aboard the merchant ships of belligerents, she showed no disposition to yield, and on 21 July, President Wilson sent his third *Lusitania* note insisting that the United States would not yield in any respect the rights of her citizens to travel under the protection of international law and declaring that the repetition of such acts as occurred in the sinking of the *Lusitania* would be held as "deliberately unfriendly." On 19 August the British liner, *Arabic*, was sunk by a submarine under conditions similar to those of the tragedy of 7 May. The American press flamed forth, demanding instant action. Before official cognizance could be taken Germany requested the President to wait for official investigation, and on 1 September she submitted the information that before the *Arabic* was destroyed she had instructed her submarine commanders to sink no liners "without warning and without safety of the lives of non-combatants, provided that the liners do not try to escape or offer resistance." She thus seemed to yield all that was asked, and the situation assumed to be easy. For some time after this it seemed that she intended to use submarines in accord with the rules of cruiser warfare, but on 24 March 1916, came the news that the British cross-channel steamer, *Sussex*, had been torpedoed by a submarine with the resulting death of several American citizens. After a brief correspondence the American government demanded the assurance that liners and freighters should no longer be sunk without warning and without regard to the safety of persons on board, threatening to sever diplomatic intercourse if the assurance was not given. Next day (19 April) President Wilson laid the matter before Congress in a candid speech which was generally

approved. Germany was now face to face with an ultimatum. She decided to yield, and in a note of 4 May 1916, gave definite assurances that merchant ships were to be dealt with under the rules of international law and not "sunk without warning and without saving human lives unless these ships attempt to escape or offer resistance." She added, however, the statement that she expected the United States to induce Great Britain also to observe the rules of international law, which led Secretary Lansing to reply that the United States could not admit that the rights of her citizens were held conditionally. Here the controversy rested until the end of January 1917. In the interval a few ships were sunk in apparent violation of the promise of 4 May, but there were usually some extenuating circumstances, and it was generally accepted that Germany was trying in good faith to live up to her word.

Behind the events just described was a controversy within German governmental circles. Admiral von Tirpitz, head of the naval administration, belongd to the German school which held that all means of distressing the enemy are justifiable. He favored relentless submarine warfare from the beginning. Chancellor von Bethmann-Hollweg took the diplomatist's point of view. It was his to make diplomacy successful, and he was in conflict with the military authorities in regard to submarine warfare. On 16 March 1916, von Tirpitz resigned and was succeeded by Admiral von Capelle. Then came an outburst of popular indignation; for the submarine policy was approved by the masses of Germans, who wished to strike Britain in any way possible. The political part of the government had the support of the kaiser for the time being and had its way in the end.

By the end of the year, however, it was evident that Germany was not winning the war and the military party became more than ever insistent on the unrestricted use of submarines. So great was the protest that the statesmen could not withstand it, and on 31 Jan. 1917, the German government announced the immediate resumption of unrestricted warfare. The communication awakened a storm of protest in the United States and left that nation no choice between war and inglorious submission. Germany was prepared for the declaration of war that came on 6 April. She did not believe the United States would be a serious factor in the fighting and she believed that the gain from the destruction of Britain's commerce would more than offset the military damage America could inflict on Germany. Happily in each respect she was to find herself mistaken.

The year following 1 Feb. 1917, was the year of supreme test for the submarine. During the period of restricted use the Germans had been actively engaged in improving this type of craft, making it larger and capable of wider cruising radius and heavier armaments. When the war began it was believed that a submarine's cruising range was little more than 300 miles. In February 1915, German submarines were working in the Irish Sea, 1,000 miles from Kiel, and three months later they were in the Mediterranean, 2,500 miles from their bases. In the latter achievement it was believed that they were aided in their progress by supply ships disguised as neutral traders. In July 1916, the world had a still more striking demonstration of the development of the submarine, when the *Deutschland*, a submarine of commerce, reached Baltimore, Md., a distance of more than 4,000 miles from Hamburg. On 7 Oct. 1916, the German U-53 arrived at Newport, R. I., remained in port a few hours, and sailed for home without taking in supplies, loitering two days near Nantucket where she sunk eight vessels, two of them neutrals. When unrestricted warfare began in February 1917, the best German U-boats had an operating radius of 10,000 miles, a surface speed of 25 miles an hour, and carried six-inch guns with a range of 6,000 yards. It is probable that the possession of these improved vessels served to whet the desire for unrestricted use of them. So confident were the defenders of the policy that they promised the people that three months of it would see the British on their knees suing for peace. How near they came to making good their threat the allied public did not know until the war ended. Admiral Sims is authority for the statement that in April 1917, when he arrived in England to represent the United States in naval matters, the sinking reached nearly 900,000 tons a month, which was three or four times the amount announced officially. At that time and until the end of the war the earnest efforts of Britain, the United States and France were concentrated in combatting the activities of submarines.

The means employed for this purpose were such as experience dictated. By carefully stretching nets across the British Channel that means of exit had been closed. Steps were now taken to establish a mine barrage from Scotland to the coast of Norway, consisting of a line of several mines one above another. It was a gigantic undertaking but was accomplished largely through the efforts of American naval engineers. To combat the submarine itself depth bombs were used. When these powerful explosives went off near a submerged U-boat the concussion was likely to damage the delicate mechanism of the boat or crush its thin sides. From June 1917 to November 1918, more than 2,000,000 United States troops were carried across the Atlantic to the battlefields of France, despite the submarines. Careful convoying kept them safe. In general the same thing was true of the vast supply service that supported these troops in France, and of the regular trade with Great Britain and France. In the beginning of the war the British did not use the convoy method, partly because of the demand it made on the navy for destroyers, which were needed in other capacities, partly because it was a slow system of moving ships, and partly, perhaps, of an inherent British unwillingness to admit that they were forced to extreme measures by their enemies. When the American navy became available the convoy system became more feasible than when it depended on the navy of the Allied powers, already fully employed in guarding the ports in which the German and Austrian fleets were shut up. The construction of destroyers also promoted the use of convoys.

The most considerable event in connection with the warfare against the submarines was the attack on the submarine bases at Zeebrugge and Ostend, on the Belgian Coast. These two ports not only harbored the submarines that went out

to the southern coasts of England but a large number of destroyers and light cruisers that were accustomed to raid the fishing fleet and otherwise disturb Allied shipping in the North Sea. If these bases could be closed the destroyers set to watch them could be used against submarines on the ocean lanes and the mine fields in the North Sea could be extended so that the region would be free from the craft of the enemy. The ports were well fortified and defended by mine fields, but a plan was made to enter them and block their channels and its execution was entrusted to Rear-Admiral Keyes, who had seen good service at the Dardanelles. It involved the sinking at night of ships laden with concrete in the narrow channels. It was believed that once they were sunk the shifting sands of the coast would accumulate around them and make obstructions not easily removed.

The assembled expedition consisted of five old cruisers to serve as block-ships, a small fighting cruiser, the *Vindictive,* for attack in the harbor, two ferryboats, and a number of destroyers and motor launches. It sailed for the Belgian Coast on 22 April 1918, its movement timed to arrive at Zeebrugge by midnight. At sea the flotilla divided, three block-ships going to Zeebrugge and two going to Ostend. At the latter place the project was simply to take the two vessels into the harbor as far as possible and sink them. At Zeebrugge the work was more difficult; for there was no harbor proper at this place. The canal from Bruges here reaches the sea and to protect it from shifting sand a mole 54 metres wide and more than a mile long was thrown out in front of its mouth. On the mole was a garrison of 1,000 men well supplied with machine guns and small artillery. The plan was to attack the mole from the outer side in order to draw the attention of the defense, while the block-ships passed around its end into the harbor and thence into the canal. An old submarine was filled with explosives and sent forward against a portion of the mole near the shore where it became a viaduct in order to allow the wash of the tides underneath. The object was to explode her when she was in position, destroy the viaduct, and thus isolate the garrison on the end of the mole. Motor launches and destroyers were to make smoke screens behind which the vessels were to operate. The expedition was timed to arrive at midnight and to finish its work by 1:30 A.M., for the shore batteries had a range of 16 miles and the vessels should be out of their reach when dawn appeared about 3 o'clock.

As the expedition neared Zeebrugge the smoke screen was liberated and the northeast wind carried it toward the shore. Monitors began to shell the shore works, as they had often shelled them before. The garrison, contrary to expectations, deserted their posts on the mole and sought cover on the shore. Then the wind shifted and the line of approaching ships was revealed to the Germans, who sent up star shells and opened a terrific fire. But the *Vindictive* continued her course and laid her nose alongside the outer wall of the mole, being held in position by one of the ferryboats on the other side. Bluejackets leaped on the mole and despite the hail of shell that swept it advanced toward the shore, finding no one before them. Meanwhile the old submarine had been steered straight for the viaduct. A mass of German soldiers waited on it, seeming to think she wished to surrender. Her commander drove her between the piles of the viaduct, pressed the button that ignited the fuses, and jumped into a boat with his men and escaped. A minute later she blew up with a great column of flame that made a yawning breach in the viaduct and carried to their deaths the unfortunates who were upon it.

While these things happened the three block-ships reached the inner harbor and steered for the mouth of the canal. One of them fouled her propeller in some harbor nets, drifted toward the shore and was sunk by the batteries. The other two entered the canal and were sunk in positions slanting across it effectively barring its passage. The crews of these ships escaped to the destroyers for the most part. This done the signal for re-embarkation was given, when those on the mole who still survived went aboard the *Vindictive* and the ferryboats, and the flotilla steamed away as rapidly as possible. Many a brave man was slain, but the survivors reached England in a burst of glory. The deed they did was in keeping with the achievements of Drake and Sir Richard Grenville. It raised the navy, in the minds of Englishmen, from the monotony of machine-like routine to the dashing adventures of the days of chivalry.

The portion of the expedition that had gone to Ostend did not have the same good luck. Discovered before they entered the outer harbor they became targets for a fierce bombardment and the vessels sank before they found the entrance to the inner harbor. The attempt was renewed on 9–10 May and with better success. The *Vindictive,* scarred in the first fight, was taken with great boldness into the harbor and sunk in a position that blocked the channel for all but small ships. The expeditions against Zeebrugge and Ostend did not end the warfare of the submarine, but materially restricted it. The Germans made efforts to remove the block-ships, but Allied aircraft visited the spots constantly, dropping bombs, driving away the working parties and damaging the repair apparatus.

All the time the steady work of snaring the submarine went on. Each month the shipyards turned out more destroyers and the munitions works more and more effective depth bombs. The mines grew more powerful and more numerous, so that the barrages were larger and deeper. To get a submarine out of the bases on the German Coast now took the work of mine-sweepers for eight or nine days. Their trips became more infrequent because of this delay. At the same time the number that fell victims to the destroyers increased, though it was never as large as the public thought. As the process of destruction advanced the trained officers were killed, the sailors began to protest against the service, and the U-boats that got out to sea showed more timidity about attacking, all of which lessened the efficiency of the service. When the submarines were called in by the German admiralty late in October 1918, they came willingly, flying white flags in their journeys across the North Sea. When the war was over there was much curiosity among the Allies to see how many would be surrendered. The terms of the armistice demanded that Germany give up all she had. On 20 November

she sent a first instalment of 20 vessels to the designated rendezvous off Harwich, where they were handed over in grim silence. Later on it was found that she had an additional 102 completed and 170 uncompleted submarines in her territorial waters, and these also were surrendered. It was estimated that she lost 216 during the war. Thus passed out of her hands the most successful weapon she used in her naval war. She had built a great navy and trained many sailors to serve it well, and she had used the submarine so skilfully that her conquerors were aghast and did not dare leave in her hands so deadly an implement of destruction.

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12. AERIAL OPERATIONS. The history of what was accomplished by American aviators in the last months of the World War contributes a glorious chapter to the annals of the army. It must, however, be admitted that the credit belongs to the aviators and the race which produced such splendid youth full of the intelligence, courage and hardihood demanded by this branch of the service. The "Army" as a parent body can claim little credit for the work that was done between August and November 1918. French and British Allies supplied both the matériel and the training without which our most brilliant flyers must have remained on the ground. From 1908 to 1916 aviation in the United States army received little assistance from the general staff. In April 1917, the United States had two aviation fields and 55 airplanes. The National Advisory Committee on Aeronautics having acquired a scientific knowledge of some of the air problems declared 51 of these machines to be obsolete and the other four obsolescent. In the spring of 1917 when the United States entered the World War that great conflict had been in progress some 32 months. It is humiliating to American pride to admit that our professional military establishment appears to have learned almost nothing from the conflict abroad that could be made use of when America joined the Allies in April 1917. The army possessed a general staff and under the direction of that corps of selected experts the service schools were teaching officers the tactics and strategy of the Civil War. The artillery branch of the service believed its three-inch field piece to be equal to any light artillery weapon ever invented. The potential value of tanks had been demonstrated by an officer of the National Guard more than a dozen years before, but the value of the model then built was recognized by France and ignored at home. The Wright Brothers had been experimenting with heavier-than-air flying machines for a long time but the United States army had less than 100 qualified flyers when war was declared. It is doubtful whether there was anyone in the military establishment who realized that not one of these flyers was competent to meet in an air duel a war-trained pilot. An aviator able to fly a plane would have been an easy victim of an opponent skilled in the tactics of air fighting which required an ability to execute a variety of manœuvres which were quite unknown in the United States. Air fighting had made more progress between 1914 and 1917 than any other technical service.

At the outbreak of the war the chief use of aeroplanes was in reconnoitring enemy positions and correcting artillery ranges. Some raids were made and some explosives dropped but little more than moral effect was expected from these exploits. But by the time the United States entered the war a much wider program had been evolved for the air forces. Great air squadrons operated in offensive undertakings with well-planned technique. It was a common practice of the enemy to set an aerial trap by dispatching at a comparatively low altitude several large slow machines such as were used for photographing or bombing which offered an inviting target for Allied attack. When half a dozen Allied planes flew to the apparently easy conquest of an incautious enemy they were liable to fall victims to an unexpected assault by very fast enemy Fokkers which had been flying much higher and waiting for the opportunity to dive down and deliver a raking fire from the rear upon the unsuspecting Allied squadron. The plain flying man would have been the most helpless of victims in such a combat. Only the skilled fighter could hope to convert defeat into victory by the instant execution of the "renversement" and a "zoom" which would put him on the enemy tail and in possession of all the advantage of position which a few seconds before had threatened death and destruction.

Not only were these manœuvres of air fighting unknown in the United States in 1917 but that country had no machines which would have admitted of their execution. *Vrilles, Piques* and *Virages* demanded not only skilled pilots and dependable motors but a strength of structure and materials beyond anything we possessed. Even the French Nieuport, a fighting plane much favored before the Spad was developed, often stripped her wings and crashed under the sudden strain of some of these terrific demands.

Prior to the entrance of the United States into the war nothing was scarcer in America than the truth. Every Allied effort was heralded as a "great advance" or a most "skilful strategic retirement." Each German attack was widely proclaimed as the Huns' last expiring effort.

Amid all the misinformation published, the news as to aerial conditions was perhaps the most misleading. In the early summer of 1918 the writer crawled into a listening post in front of Bethincourt and was asked by an intelligent American infantryman a question that might have been asked by millions of puzzled Americans if they had been situated where the truth was apparent. The soldier said, "Major, can you tell me what is the matter with Uncle Sam? I got a two months' old newspaper in the mail from home, and it says the Allies are masters of the air. This morning the Huns came across and shot down three French artillery balloons back of this sector and a few days ago I saw them shoot down four balloons, and they went back safe and sound. Down in the State I come from, folks all thought that some clever Yankees would invent new things that would wind up this war quick and easy, almost as soon as we got started. We've been in the war 16 months now and we can see for ourselves that the papers are just fooling the folks at home." That boy was one of the thousands who gave their lives two months later to win the victory that came to valor if not to genius.

Between May and November 1918 American squadrons trained and equipped by the French came rapidly into the fighting area, where for daring and ability they had no superiors. The American Air Force at the front increased from three squadrons in April 1918 to 45 squadrons in November 1918. When the armistice was signed these squadrons had an equipment of 740 planes. Altogether 2,698 planes were sent to the zone of the advance for American use, and of these 667 were of American manufacture. Of these 2,698 planes dispatched to the front only 1,162 remained when the armistice was signed.

At that time we had at the front 20 pursuit squadrons, 18 observation squadrons and seven bombing squadrons with 1,238 flying officers. There were also 23 balloon companies. The first American flyers were the Lafayette Escadrille, an organization of Americans serving in the French army who were transferred to the American service in December 1917.

The most successful American squadron was the 94th pursuit squadron (the "Hat in the Ring Squadron") which was the first to go over the enemy's lines — the first to destroy an enemy machine — and which shot down the last German aeroplane which fell in the war. This squadron boasted eight aces, including Capt. Edward V. Rickenbacker, its commander, American "Ace of Aces." Frank Luke, who was killed after 18 victories in six weeks and Hamilton Coolidge, a brilliant pilot, killed by a German shell, which having missed a bombing plane at which it was aimed, struck his fast-flying Spad by accident square under the centre of the engine. Douglas Campbell of the 94th was the first simon-pure American ace, having entered the war with the Americans and earned all his victories in that service. He had scored seven victories before being badly wounded. Maj. Raoul Lufbery, with 18 victories to his credit, 17 of which were scored while he was with the Lafayette Escadrille, was killed when he leaped from a burning Spad fired by a flaming bullet from an enemy Albatross which he was attacking near Nancy.

Quentin Roosevelt was a pilot in the 95th squadron and had been made a flight commander shortly before he was killed in a disastrous battle with the most famous of all German squadrons, Baron von Richtofen's "Flying Circus." This enemy unit equipped with red-nosed Fokker planes was manned by the most expert airmen in the German service. Familiar with every trick of aerial combat and flying machines capable of great speed, fast climbing ability and extreme flexibility of movement the Flying Circus was for a long time the terror of the skies from Flanders to Verdun. The Loezer Circus was another celebrated German air squadron.

It was the chief glory of the American air service to have finally conquered these most dangerous opponents who represented the utmost in skill, daring and equipment evolved by Germany during the war. A brief description of a battle fought on the afternoon of 10 Oct. 1918 over Dun-sur-Meuse may serve as an example of how these dangerous enemies were finally vanquished. The 94th squadron had been ordered to destroy two enemy balloons, one at Dun-sur-Meuse and the other at Aincreville. On this mission 14 Spads of the 94th squadron flew toward the German lines with eight planes from the 147th squadron covering the right flank and seven planes from the 27th squadron protecting the left. It was known that along this front north of the Verdun-Argonne sector the Germans had concentrated their best air units including the red-nosed von Richtofen Circus, the yellow-bellied fusilages of the Loezer Circus and the checkerboard insignia of the No. 3 Jagstaffel. The Germans also had on this front the new scout machine — the Sieman-Schuckard — driven by a four-bladed propeller and capable of a much faster climb than even the French Spad. This ability to climb fast is a tremendous advantage, as it enables a skilful tactician to gain the ceiling, i.e., secure an overhead position from which to fire or dive upon his opponent. Some new Fokker planes were equipped with four instead of two machine guns and, therefore, were capable of projecting a perfect shower of bullets upon an opponent. Captain Rickenbacker commanding the 94th squadron assigned to Lieutenants Coolidge and Chambers the task of setting fire to the balloons and directed all of the participants in the surprise raid to

assemble in formations as arranged at 3,000 feet above Montfaucon at 3:40 (15:40 French time) o'clock. With the two balloon Strafers in the lead the entire force were to fly toward the Dun-sur-Meuse gas bag, intent upon protecting Coolidge and Chambers from German air forces certain to fly to the defense of their balloons, especially as the afternoon was clear. The ensuing battle is of special interest because the secret intelligence reports conveyed the information that the enemy had gathered here the strongest air force ever concentrated since the beginning of the war.

The American raiders turned from the rendezvous over Montfaucon toward their first objective with the commander flying his Spad several thousand feet above the flotilla to watch its progress.

Over the lines they were welcomed by a tremendous outburst of "archies" which, however, failed to injure any of the Americans. Inside German territory the Dun balloon was in sight and presently 11 Fokkers were observed flying to its defense from the direction of Stenay. Presently eight more could be seen coming up from Metz and it was evident that although the whole German front was falling back their methods of interior communication were still most efficient. The 147th squadron under Lieut. Wilbur White of New York was at this time separated from the rest of the Americans by nearly a mile and von Richthofen's men passed under the American commander as they drove on to attack the dislocated unit. Having allowed them to pass, Rickenbacker banked sharply and gaining speed as he came down from the ceiling promptly secured a position close on the tail of the last of the Fokkers. His first stream of shots set fire to the German's fuel tank and the next moment the German aviator leaped from the blazing machine, and due to his equipment with an umbrella parachute settled to safety within his own lines. A similar device might have saved many an American aviator from the torture of roasting to death in a falling plane on fire. The American ace immediately "zoomed" up to regain the advantage of the ceiling and by that time a regular battle was being fought by the remaining 10 Fokkers and the eight Spads of the 147th squadron. The German leader selected the rear Spad for his own attack, and to protect his comrade Lieutenant White "zoomed" up and with a renversement rushed to the rescue of the apparently doomed American. White was one of the bravest as well as most skilful of the American airmen and as he completed his manœuvre he made a direct plunge upon the German. Without firing a shot White rammed the Fokker head-on while the two machines were approaching each other at tremendous speed and the mingled débris fell in a heap on the banks of the Meuse far below. By an act of unsurpassed heroism the American commander had saved the life of his subordinate, sacrificed himself and destroyed an enemy. The German squadron having seen their leader killed by this extraordinary attack abandoned the fight. Meanwhile the German balloon company had succeeded in pulling to earth their huge balloon, but Lieutenant Brotherton of the 147th squadron *piqued* upon it through a storm of projectiles until a "flaming onion" set fire to his wings and he fell into the German position. At the same moment two Fokkers succeeded in manœuvring into a position on the tail of the Spad flown by one of the most famous of the American air fighters, Lieut. James Meissner. This American ace was saved by the prompt attack of Captain Rickenbacker, whose accurate shooting destroyed one of the Fokkers and drove the other off. Lieutenants Coolidge and Chambers, although failing to get the balloon, each shot down a Fokker, so that on that afternoon the famous 94th squadron added four victims to their score, all from the élite of the German air service.

This battle occurring as it did as part of the Meuse-Argonne offensive, the greatest battle ever fought by American troops, clearly demonstrated the quality of the brave Allied airmen who had fought and died to hold the enemy in check until Americans could be trained and equipped to take up and help complete the task. German airmen were dangerously efficient.

Our brave boys inherited the splendid traditions of both the French and British air services. They knew the story of that great Frenchman, Lieut. George Guynemer, who met his glorious death on 11 Sept. 1917 while engaging five German Albatross machines in a battle where 40 German planes were up under the direct command of von Richthofen. At the time of his death Guynemer had accounted for 53 enemies, of whom 25 had been shot down by the end of 1916 and the other 28 in a little more than eight months of 1917.

Among the stories of British air heroes they remembered that of Lieut. R. A. J. Warneford, V.C., who was killed so long ago as 17 June 1915, 10 days after he had destroyed a great German Zeppelin raider near London. It would be a cheap folly to attempt to belittle either the skill or the courage of the German flying service, which against the best efforts of French, British, Belgian, Russian, Italian and American airmen maintained a hard struggle for the mastery of the air for more than four years. They met unexpected efficiency and strength in the first days of the war from the few but devoted airmen of Belgium, whose skilful reconnaissance did much to rob the early German attacks of their "surprise" value. Russia, like Germany, had for two years before the war kept strictly secret her aerial development and when the storm broke the tsar's armies were surprisingly well equipped with both men and machines.

The German air service in addition to excellent mechanical equipment had the advantage of a superior co-operation on the part of other branches of the military service. The British and especially the American airmen have demanded a complete separation from bureaucratic army control. The Americans have been almost a unit in declaring that they were prevented from becoming a factor in the war until in France they practically escaped from the paralyzing influence of their own War Department and general staff. It appears to be an undeniable fact that we had never achieved even in the last days of the war any such system of co-operation between our artillery and our air service as that which distinguished the enemy. The German anti-aircraft guns were able by a well-understood system of shell sig-

nals to warn their airmen while far up in the skies of the approach of an enemy and to indicate the altitude at which the foe was flying. Two black puffs characteristic of the German archies breaking in front of one of von Richthofen's men were a notice that the observers on the ground had something to say. If that signal were followed by another puff 2,000 feet higher the German airman knew that an enemy had been detected flying at an altitude 2,000 feet higher than his own level. Thus warned, the man in the Fokker could choose fight or flight while there was still time to make a choice. When the various branches of an army maintain a liason as close and efficient as that, all are glad to belong to the team. Our army theoretically is all one team entirely committed to teamwork, but in the World War the air service at least seemed like a poor relation dependent entirely upon its own initiative and resources.

In considering the development of aviation in connection with the war we may begin with the estimate that before the war the warring nations had spent about $100,000,000 on air equipment and possessed at the outbreak of hostilities in the aggregate 5,000 aeroplanes and 100 dirigibles. In the autumn of 1914 various European powers sought aeroplanes, and more especially equipment in the American market with the result that by the end of that year the factories were running to capacity.

At that time military opinion maintained that in view of limited production the air machines were too valuable to be used in actual fighting and were far more useful for reconnaissance and range-finding. A noticeable improvement in the duration of flight indicated increased control and greater reliability and endurance on the part of the newer models. In 1915 the sales of aeroplanes and parts in the United States were estimated at $5,000,000, and large factories were operating in the United States and Canada, including the Curtiss Company in Buffalo; Wright Aeroplane Company, Dayton, Ohio; Glenn L. Martin Company, Los Angeles, Cal.; Sturtevant Aeroplane Company of Massachusetts; Burgess Company, Marblehead, Mass.; Thomas Company, Ithaca, N. Y., besides many smaller concerns.

In the field of war, biplanes and triplanes were being used and military aeroplanes had been so far improved that it was possible for the aviator to take hands and feet from the controls long enough to use a camera, drop a bomb, consult a map or aim and fire a weapon.

Congress in 1915 appropriated the small sum of $300,000 for army aeronautics and although American factories were producing much aeroplane matériel very little progress was made in developing personnel. In that year air battles began to be fought between squadrons operating as organized units and there were many duels between single opponents. The opinion began to gain ground that the best way to dispose of an enemy aeroplane was by attack in the air with another plane. Experience had shown that a machine might be hit by many bullets fired from the ground and yet not disabled. The French organized aero squadrons (*escadrilles*) with bombing planes, gun planes and chasers. France at that time was using Bleriot two-seaters with Gnome motors — Clement-Bayard, Caudron, Henry, Maurice Farman, Morane-Saulnier and Voisin machines. A political-military scandal had led to an early war prohibition of the use of Bleriot, Deperdussin, Nieuport and R. E. P. monoplanes. Later the Nieuport came into very general use, although its wings proved unreliable when subjected to the terrific strain of *piques, vrilles* and other sudden strains which resulted from the new tactics of air fighting. In 1917 and 1918 American flying cadets were trained largely on Nieuports, and our aviators did their first fighting in these machines. In the summer of 1918 they were first equipped with the much superior Spad.

As early as 1915 the Germans were using huge battle planes equipped with Mercedes engines and two machine guns. Many of the French and German aeroplanes were armored on the bottom to permit low flying. On 16 Feb. 1915, 40 French and British aeroplanes and seaplanes bombarded the German lines in Belgium. In August of that year 32 battle planes attacked and bombed German munition factories at Saarbrücken and later in the same month 62 Allied planes raided Dellingen.

The year 1916 was notable in military aeronautics for improvements in aeroplane engines by both French and Germans. The Germans improved the Mercedes engine and put the Oberussel nine-cylinder air-cooled rotary motor in their Fokker monoplanes. They also used the Benz motors extensively. France developed the Hispano-Suiza which weighed only 2.42 pounds per horsepower. England at that time had 500,000 people employed in the air service including many non-combatants and it was reported that the British expenditures for the year on the air service reached $250,000,000. In America the Wright-Martin Aircraft Corporation absorbed the Wright Company, Glenn L. Martin Company, and others. The Curtiss Aeroplane and Motor Corporation had been greatly developed. When the United States War Department in November 1916 called for bids for 148 service twin-motored hydro-aeroplanes for coast artillery use, 12 manufacturers submitted proposals, offering both biplane and triplane types. The United States export business in heavier-than-air machines for 1916 amounted to somewhat less than $4,500,000. A much applauded event in American aviation was a successful flight of 12 aeroplanes from Mineola, Long Island, to Princeton, N. J., on the occasion of the Yale-Princeton football game. In December eight aeroplanes flew from Hempstead Plains, Long Island, to Philadelphia.

In England as decided a novelty was the new "Blimp," a combination of dirigible and aeroplane machines. These miniature airships proved very serviceable for scout and patrol duty over the waters of the British Channel where they easily sailed in circles above the fastest transports and hospital ships en route to or from "Blighty." The Blimps undoubtedly contributed much to the immunity from submarine attack of the ships which ferried armies of men back and forth across the channel. Great progress was made by the Germans with their Zeppelins and when the British were enabled to inspect one of those giant raiders, the L-33, forced to earth in England, indications were found that this machine had been developed to a point which would make possible a

non-stop flight of at least 1,500 miles at 60 miles an hour or better with favoring winds.

In 1916 the Germans made more than 30 air raids on England, destroyed considerable property and killed or injured several hundred people. Thirteen Zeppelins were destroyed.

Formidable fleets of gigantic aeroplanes carrying many tons of high explosives rained destruction on lines of communication and centres of supply far back of the entrenched fronts. Valuable progress was made in the art of photographing the trench areas.

In 1918 the aerial operations of both sides reflected the intensity of effort characteristic of the climax of the World War.

Both London and Paris suffered severely in air raids, although improved aerial defense systems devised for the protection of both capitals succeeded in destroying a number of the raiding machines.

British aviators raided and bombed German positions in Belgium and German Lorraine, including Mannheim, Treves, Saarbrücken and Thionville. They also bombed Mainz, Stuttgart, Cologne, Coblenz, Freiburg, Zweibrucken and Kaiserlauten, causing fires and explosions in munition plants and motor-works. In a second raid on Saarbrücken in May five German planes were shot down. British naval airmen frequently raided Bruges, Ostend and Zeebrugge, dropping tons of explosives. During the war the air raids on England caused the death of 1,570 people and the injury of 3,941. One hundred and ten raids were carried out by airships and aeroplanes.

In 1917 and 1918 great progress had been made in both construction and skill in handling aeroplanes in war. Speed, manœuvring ability and armament had been so far developed that the smaller scouting and fighting machines attained a velocity of 150 miles per hour. The German Gotha biplane and the British Handley-Page biplane carried several men, several guns and from one to two tons of explosives. The Italian Caproni triplane carried three tons of bombs. German battle planes were armed with guns which used four kinds of bullets — ordinary, perforating, incendiary and explosive.

On 24 July 1917 President Wilson signed an aeronautical appropriation bill amounting to $640,000,000. During the year specifications for aircraft construction and materials were formulated by the International Aircraft Standard Board of the Advisory Commission of the Council of National Defense.

The various American manufacturers combined in an organization called the Manufacturers Aircraft Association, Incorporated. The Aircraft Board was established.

The protection afforded to military inefficiency by the military censorship practically eliminated criticism of conditions abroad by labeling as a traitorous pro-German any writer who might try to communicate undesired facts. Nevertheless in the spring of 1918 the American public was rudely awakened from the dream that all was well by news which managed to reach home, largely because of the critical situation which developed when the reinforced German attacks so nearly drove a wedge between the British and the French. The news was that American armies at last arriving in great strength were proceeding to the firing-line deficient in aircraft. After the rosy, boastful announcements issued in 1917 from government sources Congress was shocked to learn that the American aviators in France lacked aircraft, both for training and for fighting. On 21 May 1918 a reorganization was effected of the air service previously under the Signal Corps of the army. The public in general was both uneasy and resentful and the President requested former Justice Charles E. Hughes to conduct an investigation. The charges were that early in the year $691,851,866.47, appropriated by Congress for the fiscal year ending 30 June 1918, had been expended with practically no results. It was alleged that members of the Aircraft Board had been financially interested in contracts. German and disloyal influences had retarded work. Graft had been permitted. On 25 Oct. 1918 the Hughes report was submitted and showed that investigations had been conducted in most of the larger plants having government contracts. Nearly 300 witnesses had been examined and 17,000 pages of testimony taken.

The report showed that of the $691,851,866.47 appropriated the actual amount disbursed for aviation purposes up to 30 Sept. 1918 was $139,186,661.33, subject to a considerable reduction for salvage.

Responsibility for inefficiency and delay in organization and work was placed upon responsible officers in the Signal Corps and Justice Hughes pointed out that the provisions of the criminal statutes do not reach inefficiency.

The investigation as to personal interests disclosed reprehensible conditions exposed at great length and it was recommended that officers found to have had transactions in behalf of the government with corporations in whose profits they had an interest should be prosecuted under the Criminal Code. Subsequently it was announced that as no benefit had been gained by the relations found to exist between the officials and the contractors the officers criticised in the report, Lieut.-Col. G. W. Mixter and Lieutenant-Colonel Vincent were pardoned by the President prior to any prosecution.

The aircraft program delay was attributed to the reason that plans adopted had failed, but the subsequent appointment of civilians J. D. Ryan and W. C. Porter to take charge of aircraft production led to better organization and progress. In the selection of contractors and distribution of work, methods had been so poor that one part of the government program impeded another.

The report discussed misleading public statements made by official authority, but arrived at no definite conclusion. Causes of delay were attributed largely to lack of knowledge and capacity in the Signal Corps. Contractors' profits were discussed and the employment of German sympathizers was regarded as unavoidable because of great scarcity of skilled labor.

Equipment of the army was reported as follows. The American Expeditionary Force between 12 Sept. 1917 and 16 Nov. 1918, had received from all sources:

Pursuit Planes	For Service	3,337	For Schools		90
Observation Planes	" "	3,421	" "		664
Day Bombing Planes	" "	421	" "		85
Night Reconnaissance	" "	31			

Among other planes received were 2,285 training planes, 30 experimental planes and 108 miscellaneous, making a total of 10,472.

Eight different schools under American control had been established in France and designated for training 3,800 officers and 11,700 men.

At Tours–Observers	916	Officers	2,121	Soldiers
At Issoudun–General Flying	2,175	"	6,100	"
At Clermont Ferrand–Bombing	120	"	600	"
At St. Jean de Monts–Aerial Gunners	92	"	1,500	"
At Souge – Artillery Firing Point	159	"	750	"
At Coetquidan – Artillery Firing Point	25	"	120	"
At Macon – Artillery Firing Point	20	"	110	"
At Chatillon – sur – Seine–Observers	204	"	333	"

The Liberty engine intimately connected with the effort to develop efficient aeroplanes in the United States was developed in 1917 and put in quantity production in 1918. By autumn of the latter year the monthly output had reached 3,878 motors by the various factories engaged in its manufacture. By the time various difficulties and defects had been overcome and remedied this engine in its final 12-cylinder type combined high power with lightness and reliability.

Two months after the armistice was signed the War Department anounced that the Loening two-seater monoplane in recent tests at Dayton, Ohio, had developed a speed of 145 miles an hour with a full military load including four guns. In these tests the Loening plane carrying two passengers climbed 25,000 feet. This monoplane is American designed and American built. It is driven by an eight-cylinder 300-horsepower Hispano-Suiza engine and carries fuel for three and one-half hours' flight. In September 1919 Maj. R. W. Schroeder at Dayton, Ohio, climbed 31,800 feet in 68 minutes in a Le Père biplane. In connection with the general discussion of the scandals covered by the Hughes report it may be as well to refer here to the controversies regarding the air service in the United States army which were widely discussed in Congress and elsewhere through the latter part of 1919 after the return of the expeditionary forces from abroad. Under the leadership of Maj. (formerly Brig.-Gen.) B. D. Foulois, chief of air service, American Expeditionary Forces, the airmen seemed to be unanimous in demanding the consolidation of every aircraft activity now in existence in the United States under one central department of government and under one responsible head. This proposition for the creation of a Department of Aeronautics met strong opposition from the War Department which showed a determination to retain active control of all military organizations.

The airmen point to the woeful record of War Department control from 1908 to 1918. The military aviator is the only soldier required to risk his life in the pursuit of peace time duties and therefore demands such control of equipment and organization as will reduce to a minimum the risk of life and limb. He asks that those who control his destiny shall be devoted solely to the task of making the air service as safe and efficient as the nature of the work will admit.

The statistical summary of the war with Germany published in 1919 by the general staff says that the expenditures for the air service up to 30 April 1919 amounted to $859,291,000—6 per cent of army war expenditure. In November 1919 Major Foulois published a statement that if the United States were called upon to fit out an expedition for service in Mexico it would take at least six months or a year to equip efficiently such an expedition with up-to-date aircraft.

As these two statements, one by the general staff as to expenditures and the other by the late chief of air service in France as to post-war conditions, may both be assumed to be correct, it would appear needful that some competent authority should tell why, immediately after spending $859,291,000, the country has nothing to show for it except a dozen aviation fields and the memory of a great corps of trained airmen disbanded and lost.

This situation is important because all military authorities predict that future wars will be fought out increasingly in the air. For the first time in England's history her fleet was unable to protect English homes from enemy attack in this war. It is certain that even an ocean will not suffice to protect the American seaboard cities from aerial attack in future wars. Control of the air is the only sure safeguard.

Statistics of the Air Services. *Balloons.*—Before the armistice, America produced 642 observation balloons and received 20 from the French. Forty-three of our balloons had been destroyed and 45 given to the French and British. At the end of the war we had remaining 574 balloons. At that time the Belgian army had six, British 43, French 72, and the Germans 170 on the Western Front. Thus the American army had at the end of the war nearly twice as many observation balloons as the enemy and the Allies combined had at the front.

Air Squadrons.—In addition to purely American operations two full squadrons were attached to the British Royal Air Force in March and June 1918 and remaining with the British throughout the war participated in the following engagements: Picardy Drive, Ypres, Noyon-Montdidier, Viellers, Bray-Rosieres-Roye, Arras, Bapaume, Canal du Nord, and Cambrai.

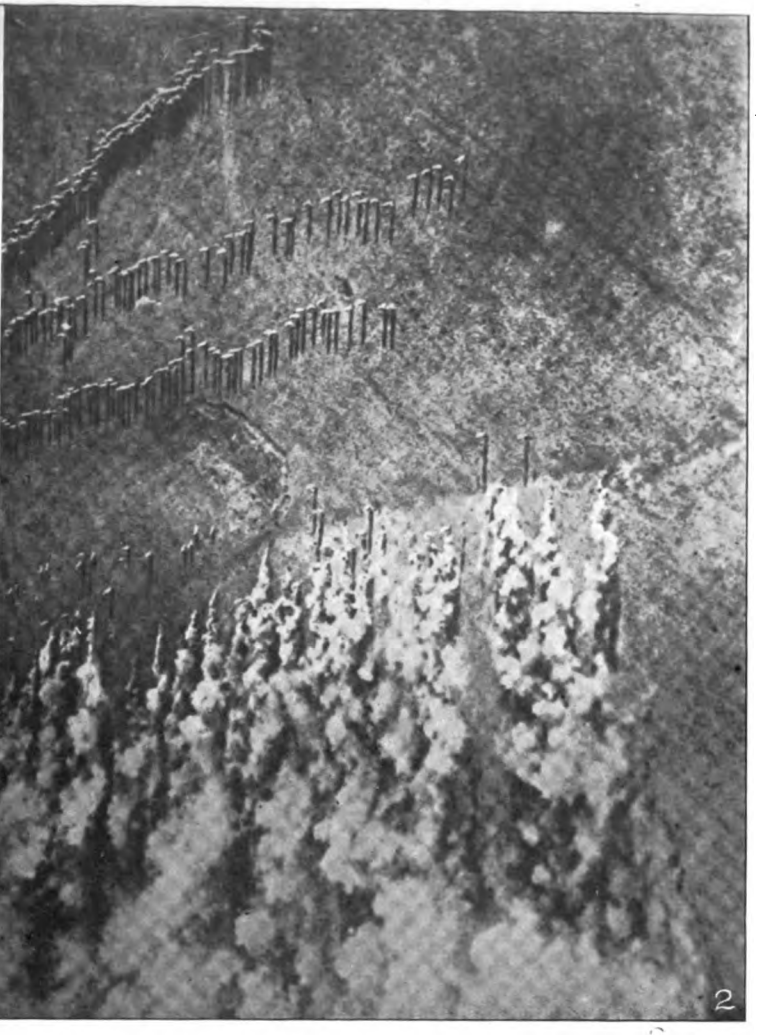
Strictly American operations began in the middle of March 1918, when an American pursuit squadron using French Nieuport planes took up patrol duties on the front from Villeneuve-les-Vertus.

By May several squadrons representing all types of service—pursuit, observation, bombing—were in active service using foreign-built planes.

In November there were 45 American squadrons on duty at the front with 740 planes. Of the total number of planes (2,698) sent for American use to the zone of advance only 667 or one-quarter were of American make. Of the 2,031 planes from foreign sources nine-tenths were French.

The planes sent to the zone of the advance were about two-thirds of the service planes received by the American Expeditionary Forces. The other one-third were used in back areas. The American Air Service bore a prominent part in the three major American operations of the war.

1 French aeroplane brought down in German lines and found by Americans when they advanced



2 The start of a gas attack as viewed from the air

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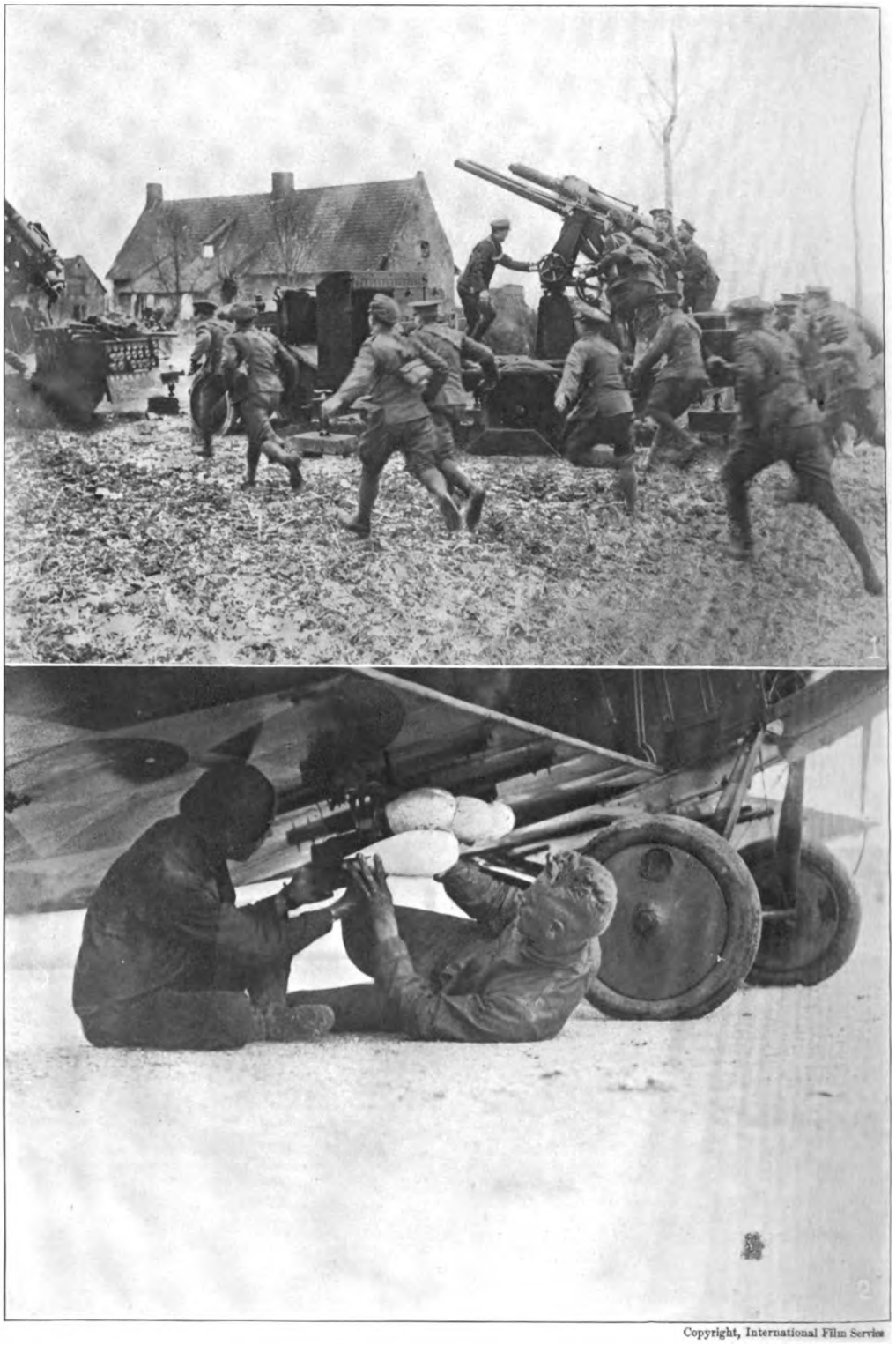

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1 British soldiers run to their gun when a German Fokker is sighted
2 Two air-fighters placing a bomb on the wings of their plane

Chateau-Thierry (July 1918).— The Germans at the start had a decided superiority in the air, but the American squadrons, comprising four pursuit, three observation and two balloon companies, rendered valuable service. Contact was established with German airmen three to 10 miles within the enemy lines and photographs were taken showing the entire front as well as the deep rear terrain. The German concentration for the attack of 15 July was reported in detail including the location of the German reserves. The Allied concentration for the counter-attack was so well covered that the enemy was surprised.

Saint Mihiel (September 1918).— In this operation the American first army was aided and protected by the largest concentration of air force ever made, of whom about one-third were American and the other two-thirds were French, British and Italian squadrons operating under American control.

The American air force consisted of 12 pursuit squadrons, 12 observation and three bombing squadrons with 15 balloon companies. American service planes recorded 4,000 flying hours during the week of the Saint Mihiel offensive.

Enemy back areas were kept under bombardment day and night. Their reserves and ammunition dumps were located for American long range artillery. Propaganda was dropped. Photographic records were made showing every movement in the enemy lines and of his reserves, and the finished photographs showing these movements were frequently delivered to headquarters within half an hour of the occurrence. Fast pursuit planes armed with machine guns flew low over the German lines firing directly into their infantry. The fog lying low in the Meuse valley compelled the day bombers and the artillery observers to fly very low.

Meuse-Argonne (September to November 1918).— In this great final battle of the war the Germans had effected a very thorough distribution of strong air forces along the southern sector of the front and it was not possible to effect against them so heavy a concentration as that made at Saint Mihiel. Less assistance was rendered by French and British airmen but the American force was considerably larger.

During the six weeks' struggle heavy losses were suffered but replacements were brought forward so promptly that in the final stage of the conflict the available American strength was greater than at the start.

Summary.— When the United States entered the war the Allies furnished the designs of their planes and between that time and the end of the war supplied us with 3,800 service planes. Aviation training schools in the United States graduated 8,602 from elementary courses and 4,028 from advanced courses. More than 5,000 pilots and observers were sent overseas.

The total personnel of the air service, officers, students and enlisted men increased from 1,200 at the outbreak of the war to nearly 200,000 at the close. Up to 30 Nov. 1918 more than 8,000 training planes were made in the United States. Three thousand two hundred twenty-seven De Haviland Four observation and Day bombing planes were completed and 1,885 shipped overseas. Thirteen thousand five hundred seventy-four Liberty engines were completed and 4,435 shipped to the American Expeditionary Forces and 1,025 delivered to the Allies.

In November 1918 Germany's air force consisted of nearly 2,700 machines divided as follows: bombing machines, 200; for infantry liason, 250; reconnaissance and artillery observation, 1,100; fighting, 1,100.

American Air Casualties.— Revised figures issued by the United States War Department show that the American flying forces at the front sustained 583 casualties during the war. The figures show the number of casualties among the aviators in each branch of the air service and also among American flyers serving with the Allied armies. The figures include the killed and injured in flying accidents at the aerodromes in the zone of advance. The casualties were distributed as follows:

American Armies	Number	Per cent
Pursuit pilots	184	31
Observers	150	26
Observation pilots	105	18
Bombing pilots	48	8
Balloon flyers	4	1
Total with A. E. F.	491	84
With British	64	11
With French	25	4
With Italian	3	1
Total	583	

Of the 583 casualties 36 per cent consisted of deaths in combat, while 11 per cent occurred at aerodromes. The record in this respect follows:

	Number	Per cent
Killed in combat	208	36
Prisoners	145	25
Wounded in action	132	22
Killed in action	41	7
Missing in action	29	5
Injured in accident	25	4
Interned	3	1
Total	583	

French Air Casualties.— The total casualties to pilots, observers and gunners killed, wounded, taken prisoners and missing amounted to 7,555, 63 per cent., out of a total of 12,000 pilots, observers and gunners.

List of Aces. *United States.*— An official report by the War Department showed there were 63 "Aces" — men downing five or more enemy machines — in the American army when the war ended.

American Aces

Captain Edward V. Rickenbacker, of Columbus, Ohio premier "Ace" of the American air force, 26 victories.

First Lieutenant Frank Luke, Jr., of Phoenix, Ariz., who was killed in action, was second on the list of "Aces" with 18 victories.

Major Victor Raoul Lufbery, of Wallingford, Conn., who was also killed in action, was third with 17 victories.

Captain Reed G. Landis, of Chicago, and *First Lieutenant David E. Putnam*, of Brookline, Mass., who was killed in action, had 12 victories each.

Lieutenant Fields Kinley, Gravette, Ark.	10
Lieutenant G. A. Vaughn, Jr., No. 441 Washington avenue, Brooklyn	10
Lieutenant J. M. Swaab, Philadelphia	10
Lieutenant Thomas G. Cassady	8
Lieutenant C. E. Wright, Cambridge, Mass.	9
Lieutenant W. P. Erwin, Chicago	9
Captain E. W. Springs, Lancaster, Pa.	9
Lieutenant H. R. Clay, Jr., Ft. Worth	8
Major James A. Meissner, No. 45 Lenox road, Brooklyn	8
Captain Hamilton Coolidge, killed, Boston	8
Captain G. F. Larner, Washington	8
Lieutenant P. F. Baer, Ft. Wayne, Ind.	8
Lieutenant F. O. D. Hunter, Savannah	8
Lieutenant W. W. White, deceased, No. 541 Lexington avenue, New York	8

American Aces — Continued

Lieutenant C. Jones, San Francisco	8
Captain R. M. Chambers, Memphis	7
Lieutenant Harvey Cook, Toledo	7
First Lieutenant Lansing C. Holden, No. 103 Park avenue, New York	7
First Lieutenant Karl Harold J. Schoen, deceased, Indianapolis	7
First Lieutenant Wendel A. Robertson, Fort Smith, Ark	7
First Lieutenant Leslie J. Rummell, No. 798 South 11th street, Newark	7
Lieutenant L. A. Hamilton, deceased, Burlington, Vt., or Pittsfield, Mass	7
Lieutenant J. O. Creech, Washington	6
Second Lieutenant Howard Burdick, No. 175 Remsen street, Brooklyn, N. Y	6
Lieutenant C. L. Bissel, Kane, Pa	6
Major Harold E. Hartney, Saskatoon, Canada	6
Captain Douglas Campbell, Mount Hamilton, Cal	6
Captain J. C. Vasconcelles, Denver	6
Captain Edgar Tobin, San Antonio	6
Lieutenant E. P. Curtis, Rochester	6
Lieutenant Sumner Sewell	6
Lieutenant R. A. O'Neill, Nogales, Ariz	6
Lieutenant Donald Hudson, Kansas City, Mo	6
Lieutenant M. K. Guthrie, Mobile	6
Lieutenant W. H. Stovall	6
Lieutenant J. D. Deane, missing in action, Concord, Mass	6
Lieutenant A. R. Brooks, Framingham, Mass	6
Lieutenant R. O. Lindsay, Madison, N. C	6
Lieutenant M. Stenseth, Twin Valley, Minn	6
Lieutenant F. K. Hays, Chicago	6
Lieutenant H. C. Klotts, no address	5
Lieutenant-Colonel W. Thaw, Pittsburgh	5
Major D. M. Peterson, Honesdale, Pa	5
Captain H. R. Buckley, Agawam, Mass	5
Major C. J. Biddle, Philadelphia	5
Lieutenant J. Knowles, Cambridge, Mass	5
Lieutenant J. A. Healey, No. 361 Union street, Jersey City	5
Lieutenant Innis Potter	5
Lieutenant F. M. Symonds, No. 20 West Eighth street, New York	5
Lieutenant G. W. Furlow, Manchester, Minn	5
Lieutenant A. E. Eusterbrook, Fort Flagler, Wash	5
Lieutenant B. Baucom, Milford, Tex	5
Lieutenant Harold McArthur	5
Lieutenant J. S. Owens, Baltimore	5
Lieutenant J. E. Wehner, deceased, No. 124 East 28th street, New York	5
Lieutenant J. J. Scenley, Chicago	5
Lieutenant E. M. Haight, Astoria, N. Y	5
Lieutenant H. H. George, Niagara Falls	5

French Aces†

Name	Aeroplanes and balloons
Lieutenant Ponck	75
*Captain Guynemer	53
Lieutenant Nungesser	43
Captain Madon	41
*Sub-Lieutenant Boyau	35
*Sub-Lieutenant Coiffard	34
Sub-Lieutenant Bourjade	28
Captain Pinsard	27
*Sub-Lieutenant Dorme	23
*Lieutenant Guerin	23
Sub-Lieutenant Haegelen	22
Sub-Lieutenant Marinovitch	22
Captain Heurtaux	21
Captain Duellin	20
Captain de Slade	19
Adjutant Ehrlich	19
Lieutenant de Romanet	18
*Lieutenant Chaput	16
Captain d'Argueeff	15
Captain de Turenne	15
Lieutenant Sardier	14
Sub-Lieutenant Ambrogi	14
*Sub-Lieutenant Demeuldre	13
Adjutant Garaud	13
Sub-Lieutenant Nogues	13
*Sub-Lieutenant Navarre	12
Sub-Lieutenant Jailler	12
Lieutenant Hughes	12
Captain Leds	12
Sub-Lieutenant Tarascon	12
Captain de Sevin	12
Sub-Lieutenant Daladier	12
Sub-Lieutenant Casale	12

* Deceased.
† Official list supplied by the French embassy.

French Aces — Continued

Name	Aeroplanes and balloons
Adjutant Artigault	12
Sub-Lieutenant Guyon	12
*Adjutant Lenoir	11
*Adjutant Montrion	11
Sub-Lieutenant Herisson	11
Lieutenant Ortoli	11
Adjutant Berthelot	11
Sub-Lieutenant Maunoury	11
Sub-Lieutenant Nuville	11
Sub-Lieutenant Bouyer	11
Lieutenant Bozon-Verduraz	11
*Sub-Lieutenant Quette	10
Sub-Lieutenant Herbelin	10
Sub-Lieutenant Waddington	10
Captain Lahoulle	10
Adjutant Mace	10
Adjutant Pezon	10
*Captain Matton	9
*Captain de la Tour	9
Sub-Lieutenant Condemine	9
Adjutant Chainat	9
Adjutant Douchy	9
Sub-Lieutenant Dorme	9
Sub-Lieutenant Gros	9
Sub-Lieutenant Coadou	9
Sub-Lieutenant Dousinelle	9
*Sergeant Gerard	8
*Adjutant Gasser (ampute)	8
*Sub-Lieutenant Sauvage	8
*Sub-Lieutenant de Guingand	8
*Adjutant Chef Lapaasse	8
Sub-Lieutenant Vial	8
Adjutant Pillon	8
Adjutant Chavannes	8
Adjutant Barbreau	8
Adjutant Vitalis	8
Sub-Lieutenant Viallet	8
Sub-Lieutenant Coste	8
Lieutenant Bonneton	8
Lieutenant Poupon	8
Sub-Lieutenant Martenot de Cordoux	8
Commandant Massenent de Maroncourt	8
Adjutant Bizot	8
Marechal des Logis Moissinac	7
*Sub-Lieutenant de Rochefort	7
*Adjutant Petit	7
*Captain Doumer	7
*Captain Auger	7
*Sergeant Bosson	7
Sub-Lieutenant Languedoc	7
*Sub-Lieutenant de Mortemart	7
*Captain Derode	7
*Lieutenant Marty	7
Captain Echard	7
Sub-Lieutenant Flachaire	7
Sub-Lieutenant Bretillon	7
Sub-Lieutenant Sayaret	7
Lieutenant Lachmann	7
Adjutant Perronneau	7
Marechal des Logis Santelli	7
Commandant Vuillemin	7
Sub-Lieutenant Pendaries	7
Sub-Lieutenant Thomas	7
Lieutenant Le Coq de Kerland	7
Adjutant Delzennes	7
Sub-Lieutenant Loste	7
*Captain Raymond	6
*Adjutant Delage	6
*Sub-Lieutenant Covin	6
*Sub-Lieutenant Pegoud	6
Sub-Lieutenant de Bonnefoy	6
Sub-Lieutenant Fraissinet	6
Sub-Lieutenant Soulier	6
Sergeant du Bois D'Aische	6
Marechal des Logis Rousseau	6
Adjutant Blanc	6
Sub-Lieutenant de Marmier	6
Sub-Lieutenant Condouret	6
Sub-Lieutenant de Cazenove	6
Sub-Lieutenant de Pradine	6
Marechal des Logis Dubonnet	6
Dr. Camplan	6
Lieutenant Battesti	6
Captain Gastin	6
Captain Lefebvre	6
Adjutant Regnier	6
Sub-Lieutenant Delannoy	6
Captain Mezergues	6
Lieutenant Romatet	6
Private Martin	6

* Deceased.

French Aces — Continued

Name	Aeroplanes and balloons
*Sub-Lieutenant Delorme	5
*Sub-Lieutenant Hasdenteufel	5
*Sub-Lieutenant Cordonnier	5
*Marechal des Logis Hauss	5
*Adjutant Petit Delchet	5
*Adjutant Lobert	5
*Captain Lecour-Grandmaison	5
Sub-Lieutenant Bloch	5
Sub-Lieutenant Borzecky	5
Adjutant Chef Costes	5
Adjutant Hamot	5
Lieutenant de Bonald	5
Lieutenant de Boigne	5
Lieutenant Cassady	5
Sub-Lieutenant Plessis	5
Sub-Lieutenant Barbaza	5
Adjutant Caillau	5
Lieutenant Favre de Thierrens	5
Sub-Lieutenant Portron	5
Captain Sabattier	5
Lieutenant Leroy	5
Adjutant Naudin	5
Sub-Lieutenant Guertiau	5
Marechal des Logis de Gaillard	5
Sub-Lieutenant Guiguet	5
Adjutant de Gennes	5
Lieutenant Homo	5
Adjutant Henriot	5
Adjutant Rousselle	5
Sub-Lieutenant Gaudermen	5
Adjutant Lienhart	5
Captain Malavialle	5
Adjutant Buisson	5
Sub-Lieutenant Wertheimer	5
Sub-Lieutenant Risacher	5
Lieutenant Cayol	5
Sub-Lieutenant Regnier	5

English Aces

*Captain Mannock	73
Major Bishop	72
Major Collishaw	51
*Captain Little	47
Captain MacElroy	46
*Captain Ball	44
Captain MacLaben	43
*Captain MacCudden	44
Captain Fullard	42
*Major Stanley Dallas	39
Captain Beauchamp-Proctor	38
Major Barker	33
Captain Gilmour	31
Captain Hazell	30
Lieutenant Claxton	30
Lieutenant Lionel B. Jones	28
†Captain Woollett	28
Captain Jordan	25
Lieutenant MacCall	21
Lieutenant Cobby	21
Lieutenant MacEwen	20
Lieutenant Harrisson	20
Lieutenant MacClaugary	19
Captain Burden	17
Lieutenant Falkenberg	15
Lieutenant Highwood	14
Captain Mellings	13
Lieutenant Baldwin	13
Lieutenant Ross	12
Lieutenant Lale	12
Lieutenant Reed	11
Lieutenant Hubbard	10
Captain Whistler	10

* Deceased
† Downed 13 in one day.

The above list of British Aces is incomplete. It is understood that the Official Air Record while in transit from Field Headquarters in France to the War office in London was destroyed by enemy action at sea. Efforts to reconstruct the record from accounts of survivors, field reports, etc., will probably never adequately replace the records destroyed.

German Aces.

The *Berliner Zeitung am Mittag* on 24 April 1918 stated that of the 41 German aviators who had shot down 15 or more opponents from the beginning of the war up to that date 19 had been killed in action and two had been reported missing. The list of the fallen aces with year of their death and the number of their victims follows:

Captain von Richthofen (d. 1918)	80
Lieutenant Boss (d. 1917)	50
Captain Boelcke (d. 1916)	40
Lieutenant Gontermann (d. 1917)	39
Lieutenant Max Mueller (d. 1918)	38
Lieutenant Kurt Wolff (d. 1917)	34
Lieutenant Schaefer (d. 1917)	30
Lieutenant Allmenroeder (d. 1917)	30
First Lieutenant von Tutschek (d. 1918)	27
Lieutenant Boehme (d. 1917)	24
First Lieutenant Bethge (d. 1918)	20
Lieutenant von Eschwege (d. 1917)	20
Lieutenant Frankl (d. 1917)	19
Lieutenant Wintgens (d. 1916)	18
Lieutenant Baldamus (d. 1917)	18
Lieutenant Hess (d. 1917)	17
First Lieutenant Immelmann (d. 1916)	15
Lieutenant Dossenbach (d. 1917)	15
Lieutenant Schneider (d. 1917)	15
Lieutenant Menckoff (captured October 1918 by Lieutenant Avery, 95th Squadron)	37
The two aviators reported missing were:	
Lieutenant von Buelow	28
First Lieutenant Dostler	26

In March 1918 Germany claimed 102 aviators each of whom had shot down more than seven aeroplanes or balloons in battle, and that the total number of their victims up to May 1918 was 1,698. In the same period 43 of these aces had been killed and three were missing. Several others had been disabled and retired from the air service.

EDWIN W. DAYTON,
Major, Infantry, R. L.

13. THE ARMISTICES. Bulgaria.— Bulgaria was the first of the Central Powers to confess her complete war exhaustion. Her surrender to the Entente was the first of the closing scenes of the end of the World War. Gen. Franchet d'Esperey in command of French, British, Italian, Greek, Serbian and Slavic forces carried out a brilliant offensive in the fall of 1918, opening the road to Sofia. The Bulgarians sued for a separate armistice and one containing terms of unconditional surrender was granted on 30 Sept. 1918, when fighting ceased.

The armistice terms, all of which were of a purely military nature, were substantially as follows:

Bulgaria to evacuate all Allied territory, demobilize her army as rapidly as possible; all rolling stock and other means of transport to be turned over to the Allies.

The Allies to be allowed to pass through Bulgaria if necessary to future military operations.

Control of the Danube and Bulgarian merchant marine on that waterway to be given to the Allies.

All important strategic points to be occupied by the Allies if they wished.

In case part of Bulgaria is occupied this to be done by French, English and Italian troops. Parts of Greece and Serbia evacuated by the Bulgars to be occupied by Greek and Serbian forces respectively.

The armistice to continue in operation until the conclusion of a general peace. See THE PEACE TREATIES in this series.

Turkey.— Turkey was the next power of the Central Alliance to surrender to the Allies. Her army was routed in Palestine by Allenby. Aleppo, the main base of supplies, fell late in October and utter route and disaster faced Turkish arms. On 14 Oct. 1918 the Spanish

Ambassador at Washington, D. C., presented to Secretary of State Robert Lansing a note from the Turkish chargé d'affaires at Madrid, asking the President of the United States to initiate immediately negotiations for an armistice. In the note the Turkish government declared that it "accepts as a basis for the negotiations the program laid down by the President of the United States in his message to Congress of 8 Jan. 1918, and in his subsequent declarations, especially the speech of 27 September. In order to put an end to the shedding of blood, the Imperial Ottoman Government requests that steps be taken for the immediate conclusion of a general armistice on land, on sea, and in the air." The Turks sent General Townshend, the British general captured at Kut-el-Amara early in the war, to Vice-Admiral Cathorp, Allied commander of the Ægean fleet, to ask for terms. Accredited agents were sent by both sides to the island of Lemnos and after a discussion, lasting three days, the terms of an armistice were handed to the Turks. The latter accepted these terms on 30 Oct. 1918 and the armistice went into effect the next day. The terms were as follows:

Terms of Armistice Granted to Turkey by the Entente.

The terms of the Allies' armistice to Turkey, as given out at London 1 Nov. 1918 were as follows:

I. The opening of the Dardanelles and the Bosporus and the access to the Black Sea. Allied occupation of the Dardanelles and Bosporus forts.

II. The positions of all mine fields, torpedo tubes and other obstructions in Turkish waters are to be indicated and assistance given to sweep or remove them, as may be required.

III. All available information concerning mines in the Black Sea is to be communicated.

IV. All Allied prisoners of war and Armenian interned persons and prisoners are to be in Constantinople and handed over unconditionally to the Allies.

V. Immediate demobilization of the Turkish army, except such troops as are required for surveillance on the frontiers and for the maintenance of internal order. The number of effectives and their disposition to be determined later by the Allies after consultation with the Turkish government.

VI. The surrender of all war vessels in Turkish waters or waters occupied by Turkey. These ships will be interned in such Turkish port or ports as may be directed, except such small vessels as are required for police and similar purposes in Turkish territorial waters.

VII. The Allies to have the right to occupy any strategic points in the event of any situation arising which threatens the security of the Allies.

VIII. Free use by Allied ships of all ports and anchorages now in Turkish occupation and denial of their use by the enemy. Similar conditions are to apply to Turkish mercantile shipping in Turkish waters for the purpose of trade and the demobilization of the army.

IX. Allied occupation of the Taurus tunnel system.

X. Immediate withdrawal of Turkish troops from northern Persia to behind the pre-war frontier already has been ordered and will be carried out.

XI. A part of Transcaucasia already has been ordered to be evacuated by Turkish troops. The remainder to be evacuated if required by the Allies after they have studied the situation.

XII. Wireless, telegraph and cable stations to be controlled by the Allies. Turkish government messages to be excepted.

XIII. Prohibition against the destruction of any naval, military or commercial material.

XIV. Facilities are to be given for the purchase of coal, oil, fuel and naval material from Turkish sources after the requirements of the country have been met. None of the above materials are to be exported.

XV. The surrender of all Turkish officers in Tripolitania and Cyrenaica to the nearest Italian garrison. Turkey agrees to stop supplies and communication with these officers if they do not obey the order to surrender.

XVI. The surrender of all garrisons in Hedjaz, Assir, Yemen, Syria and Mesopotamia to the nearest Allied commander, and withdrawal of Turkish troops from Galicia, except those necessary to maintain order, as will be determined under Clause 6.

XVII. The use of all ships and repair facilities at all Turkish ports and arsenals.

XVIII. The surrender of all ports occupied in Tripolitania and Cyrenaica, including Misurata, to the nearest Allied garrison.

XIX. All Germans and Austrians, naval, military or civilian, to be evacuated within one month from Turkish dominions, and those in remote districts as soon after that time as may be possible.

XX. Compliance with such orders as may be conveyed for the disposal of equipments, arms and ammunition, including the transport of that portion of the Turkish army which is demobilized under Clause 5.

XXI. An Allied representative to be attached to the Turkish Ministry of Supplies in order to safeguard Allies' interests, this representative to be furnished with all aid necessary for this purpose.

XXII. Turkish prisoners are to be kept at the disposal of the Allied Powers. The release of Turkish civilian prisoners and prisoners over military age is to be considered.

XXIII. An obligation on the part of Turkey to cease all relations with the Central Powers.

XXIV. In case of disorder in the six Armenian villayets the Allies reserve to themselves the right to occupy any part of them.

XXV. Hostilities between the Allies and Turkey shall cease from noon, local time, Thursday, 31 Oct. 1918.

Austria.— With Bulgaria and Turkey out of the war the surrender of Austria was rendered inevitable. In the great Italian drive in October-November 63 Austrian divisions were exhausted. On 4 Nov. 1918 the war office at Rome reported: "The Austro-Hungarian army is destroyed. It suffered heavy losses in the fierce resistance of the first days of the struggle, and in pursuit it has lost an immense quantity of material of all kinds, nearly all its stores and depots, and has left in our hands about 300,000 prisoners, with their commands complete, and not less than 5,000 guns."

On 29 October Austria-Hungary sent a note to the Secretary of State of the United States requesting an immediate armistice on all fronts and the commencement of peace negotiations, stating: "Immediately after having taken direction of the Ministry of Foreign Affairs, and after the dispatch of the official answer to your note of 18 Oct. 1918 by which you were able to see that we accept all the points and principles laid down by President Wilson in his various declarations, and are in complete accord with the efforts of President Wilson to prevent future wars and to create a league of nations, we have taken preparatory measures, in order that Austrians and Hungarians may be able, according to their own desire and without being in any way hindered, to make a decision as to their future organization, and to rule it. Since the accession to power of Emperor King Charles his immovable purpose has been to bring an end to the war. More than ever this is the desire of the sovereign of all the Austro-Hungarian peoples, who acknowledge that their future destiny can only be accomplished in a pacific world, by being freed from all disturbances, privations and sorrows of war. This is why I (Count Andrassy, the new Foreign Minister) address you directly, Mr. Secretary of State, praying that you will have the goodness to intervene with the President of the United States in order that in the interest of humanity, as in the interest of all those who live in Austria-Hungary, an immediate armistice may be concluded on all fronts, and for an overture that immediate negotiations for peace will follow."

In a note explaining to the Austrian people

this plea for peace the Austrian government said:

"Austria was obliged to conform to the methods of President Wilson, who had successively replied to the three members of the Triple Alliance, and act apart from her Allies. The monarchy, which has formally adopted President Wilson's line of action, shares his opinion, as was shown by the emperor's manifesto to the peoples which, in proclaiming the federalization of the monarchy, exceeded President Wilson's program. However, the complete reorganization of Austria can only be carried out after an armistice. If Austria-Hungary has declared herself ready to enter into negotiations for an armistice and for peace, without awaiting the result of negotiations with other states, that does not necessarily signify an offer of a separate peace. It means that she is ready to act separately in the interests of the re-establishment of peace."

On 31 October Austria sued for an armistice at the fighting front. The terms to her came from the headquarters of General Diaz on 1 November and were accepted the same day to take effect from 3 P.M. 4 Nov. 1918. These terms were even more severe than those imposed on Turkey. They comprised 18 clauses, divided into military and naval articles as follows:

Terms of Armistice Granted to Austria by the Entente.

Military Clauses.

I. The immediate cessation of hostilities by land, by sea, and air.

II. Total demobilization of the Austro-Hungarian army and immediate withdrawal of all Austro-Hungarian forces operating on the front from the North Sea to Switzerland.

Within Austro-Hungarian territory, limited as in Clause 3, below, there shall only be maintained an organized military force reduced to pre-war effectives.

Half the divisional, corps and army artillery and equipment shall be collected at points to be indicated by the Allies and United States of America for delivery to them, beginning with all such material as exists in the territories to be evacuated by the Austro-Hungarian forces.

III. Evacuation of all territories invaded by Austria-Hungary since the beginning of the war.

Withdrawal within such periods as shall be determined by the Commander-in-Chief of the Allied forces on each front of the Austro-Hungarian armies behind a line fixed as follows: From Pic Umbrail to the north of the Steivio it will follow the crest of the Rhetian Alps up to the sources of the Adige and the Eisach, passing thence by Mounts Reschen and Brenner and the heights of Oetz and Zoaller. The line thence turns south, crossing Mount Toblach and meeting the present frontier Carnic Alps. It follows this frontier up to Mount Tarvis, and after Mount Tarvis the watershed of the Julian Alps by the Col of Predil, Mount Mangart, the Tricorno (Tergiou), and the watershed of the Cols di Podberdo, Podlaniscam and Idria. From this point the line turns southeast toward the Schneeberg, excludes the whole basin of the Save and its tributaries. From Schneeberg it goes down toward the coast in such a way as to include Castua, Mattuglia and Volosca in the evacuated territories. It will also follow the administrative limits of the present province of Dalmatia, including the north Lisarica and Trivania, and to the south territory limited by a line from the (Semigrand) Cape Planca to the summits of the watersheds eastward, so as to include in the evacuated area all the valleys and water-courses flowing toward Sebenico, such as the Cicola, Kerka, Butisnica and their tributaries. It will also include all the islands in the north and west of Dalmatia from Premuda, Selve, Ulbo, Scherda, Maon, Paga and Puntadura, in the north, up to Meleda, in the south, embracing Santandrea, Busi, Lisa, Lesina, Tercola, Curzola, Cazza and Lagosta, as well as the neighboring rocks and islets and passages, only excepting the islands of Great and Small Zirona, Bua, Solta and Brazza.

All territory thus evacuated shall be occupied by the forces of the Allies and the United States of America.

All military and railway equipment of all kinds, including coal belonging to or within those territories, to be left in situ and surrendered to the Allies, according to special orders given by the Commander-in-Chief of the forces of the associated powers on the different fronts. No new destruction, pillage or requisition to be done by enemy troops in the territories to be evacuated by them and occupied by the forces of the associated powers.

IV. The Allies shall have the right of free movement over all road and rail and water ways in Austro-Hungarian territory and of the use of the necessary Austrian and Hungarian means of transportation. The armies of the associated powers shall occupy such strategic points in Austria-Hungary at times as they may deem necessary to enable them to conduct military operations or to maintain order.

They shall have the right to requisition on payment for the troops of the associated powers wherever they may be.

V. Complete evacuation of all German troops within fifteen days, not only from the Italian and Balkan fronts but from all Austro-Hungarian territory. Internment of all German troops which have not left Austria-Hungary within the date.

VI. The administration of the evacuated territories of Austria-Hungary will be intrusted to the local authorities, under the control of the Allied and associated armies of occupation.

VII. The immediate repatriation without reciprocity of all Allied prisoners of war and internal subjects of civil populations evacuated from their homes, on conditions to be laid down by the Commander-in-Chief of the forces of the associated powers on the various fronts. Sick and wounded who cannot be removed from evacuated territory will be cared for by Austro-Hungarian personnel who will be left on the spot with the medical material required.

Naval Conditions.

I. Immediate cessation of all hostilities at sea and definite information to be given as to the location and movements of all Austro-Hungarian ships. Notification to be made to neutrals that freedom of navigation in all territorial waters is given to the naval and mercantile marine of the Allied and associated powers, all questions of neutrality being waived.

II. Surrender to the Allies and the United States of fifteen Austro-Hungarian submarines completed between the years 1910 and 1918, and of all German submarines which are in or may hereafter enter Austro-Hungarian territorial waters. All other Austro-Hungarian submarines to be paid off and completely disarmed and to remain under the supervision of the Allies and the United States.

III. Surrender to the Allies and the United States with their complete armament and equipment of three battleships, three light cruisers, nine destroyers, twelve torpedo boats, one mine layer, six Danube monitors, to be designated by the Allies and the United States of America. All other surface warships, including river craft, are to be concentrated in Austro-Hungarian naval bases to be designated by the Allies and the United States of America, and are to be paid off and completely disarmed and placed under the supervision of the Allies and the United States of America.

IV. Freedom of navigation to all warships and merchant ships of the Allied and associated powers to be given in the Adriatic and up the River Danube and its tributaries in the territorial waters and territory of Austria-Hungary. The Allies and associated powers shall have the right to sweep up all mine fields and obstructions, and the positions of these are to be indicated. In order to insure the freedom of navigation on the Danube, the Allies and the United States of America shall be empowered to occupy or to dismantle all fortifications or defense works.

V. The existing blockade conditions set up by the Allies and associated powers are to remain unchanged, and all Austro-Hungarian merchant ships found at sea are to remain liable to capture, save exceptions which may be made by a commission nominated by the Allies and the United States of America.

VI. All naval aircraft are to be concentrated and impactionized in Austro-Hungarian bases to be designated by the Allies and the United States of America.

VII. Evacuation of all the Italian coasts and of all ports occupied by Austria-Hungary outside their national territory and the abandonment of all floating craft, naval materials, equipment and materials for inland navigation of all kinds.

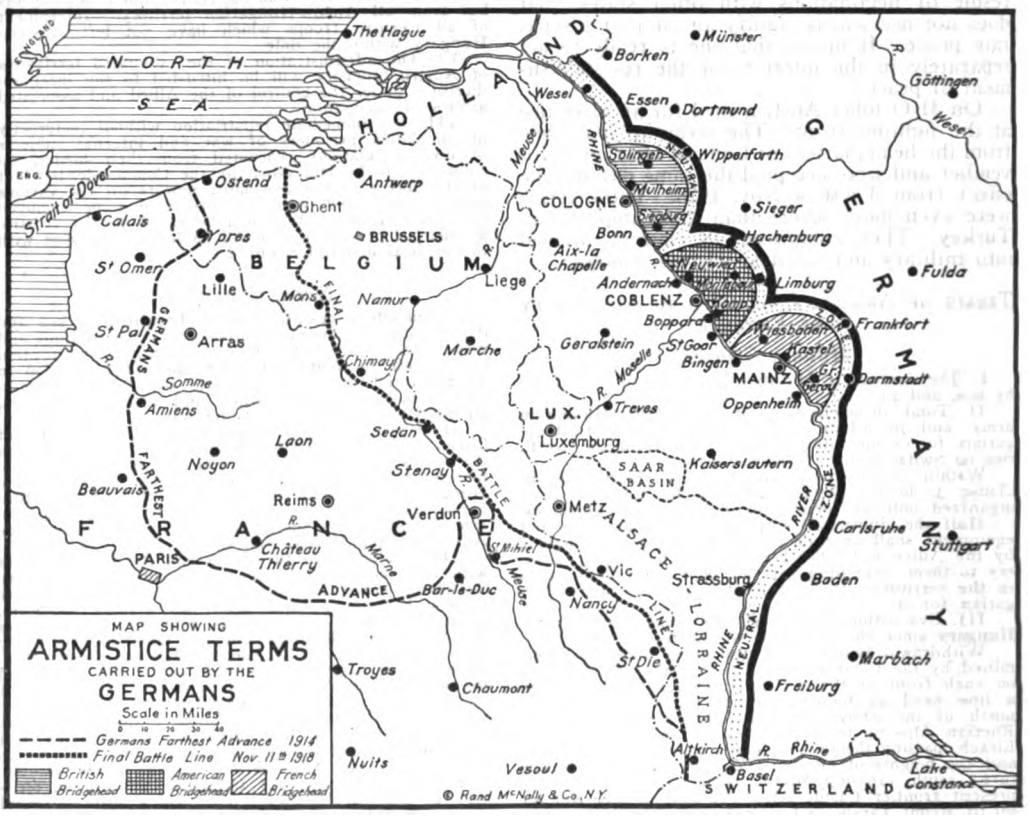
VIII. Occupation by the Allies and the United States of America of the land and sea fortifications and the islands which form the defenses and of the dockyards and arsenal at Pola.

IX. All merchant vessels held by Austria-Hungary belonging to the Allies and associated powers to be returned.

X. No destruction of ships or of materials to be permitted before evacuation, surrender or restoration.

XI. All naval and mercantile marine prisoners of the Allied and associated powers in Austro-Hungarian hands to be returned without reciprocity.

Germany.— Germany, the greatest and most powerful member of the Central Powers, was the last belligerent to lay down her arms on the terms set by the Allied and associated powers. On 5 October negotiations began between the United States and Germany. These negotiations were brought to an end on 5 November when President Wilson informed the German government that Marshal Foch had been authorized by the Allies to open negotiations with the properly accredited representatives of Germany.



On 7 November came the announcement that Germany's representatives had been appointed and were about to start from Spa, Belgium, the location of German general headquarters. On 8 November they received at Marshal Foch's headquarters the terms of an armistice of 35 clauses, the most severe and drastic ever demanded from a great power. After several days of delay and parley the German representatives accepted the terms and signed the armistice at 5 A.M. (Paris time) on 11 Nov. 1918.

The terms of the armistice follow:

I. Military Clauses on Western Front.

I. Cessation of operations by land and in the air six hours after the signature of the armistice.

II. Immediate evacuation of invaded countries: Belgium, France, Alsace-Lorraine, Luxemburg, so ordered as to be completed within fourteen days from the signature of the armistice. German troops which have not left the above-mentioned territories within the period fixed will become prisoners of war. Occupation by the Allied and United States forces jointly will keep pace with evacuation in these areas. All movements of evacuation and occupation will be regulated in accordance with a note annexed to the stated terms.

III. Repatriation, beginning at once and to be completed within fourteen days, of all inhabitants of the countries above enumerated, including hostages and persons under trial or convicted.

IV. Surrender in good condition by the German armies of the following war material: Five thousand guns (2,500 heavy, 2,500 field), 30,000 machine guns, 3,000 *minenwerfer*, 2,000 airplanes (fighters, bombers — firstly, all of the D. sevens and night bombing machines). The above to be delivered in situ to the Allied and the United States troops in accordance with the detailed conditions laid down in the note (Annexure No. 1) drawn up at the moment of the signing of the armistice.

V. Evacuation by the German armies of the countries on the left bank of the Rhine. The countries on the left bank of the Rhine shall be administered by the local troops of occupation under the control of the Allied and United States armies of occupation. The occupation of these territories will be determined by Allied and United States garrisons holding the principal crossings of the Rhine — Mayence, Coblenz, Cologne — together with the bridgeheads at these points of a thirty-kilometer radius on the right bank and by garrisons similarly holding the strategic points of the regions. A neutral zone shall be reserved on the right of the Rhine between the stream and a line drawn parallel to the bridgeheads and to the stream and at distance of ten kilometers from the frontier of Holland up to the frontier of Switzerland. The evacuation by the enemy of the Rhine lands (left and right bank) shall be so ordered as to be completed within a further period of sixteen days — in all, thirty-one days after the signing of the armistice. All movements of evacuation and occupation are regulated by the note (Annexure No. 1) drawn up at the moment of the signing of the armistice.

VI. In all territories evacuated by the enemy there shall be no evacuation of inhabitants; no dam-

age or harm shall be done to the persons or property of the inhabitants. No person shall be prosecuted for offenses of participation in war measures prior to the signing of the armistice. No destruction of any kind shall be committed. Military establishments of all kinds shall be delivered intact as well as military stores of food, munitions and equipment not removed during the time fixed for evacuation. Stores of food of all kinds for the civil population, cattle, etc., shall be left in situ. Industrial establishments shall not be impaired in any way and their personnel shall not be removed.

VII. Roads and means of communication of every kind, railroads, waterways, main roads, bridges, telegraphs, telephones, shall be in no manner impaired. All civil and military personnel at present employed on them shall remain. Five thousand locomotives and 150,000 wagons in good working order with all necessary spare parts and fittings shall be delivered to the associated powers within the period fixed in annexure No. 2 and the total of which shall not exceed 31 days. There shall likewise be delivered 5,000 motor lorries (camion automobiles) in good order within the period of 36 days. The railways of Alsace-Lorraine shall be handed over within the period of 31 days, together with all pre-war personnel and material. Further the material necessary for the working of railways in the countries on the left bank of the Rhine shall be left in situ. All stores of coal and material for the upkeep of permanent ways, signals and repair shops shall be left in situ. These stores shall be maintained by Germany in so far as concerns the working of the railroads in the countries on the left bank of the Rhine. All barges taken from the Allies shall be restored to them. The note, Annexure No. 2, regulates the details of these measures.

VIII. The German command shall be responsible for revealing within the period of 48 hours after the signing of the armistice all mines or delay-acting fuses on territory evacuated by the German troops, and shall assist in their discovery and destruction. It also shall reveal all destructive measures that may have been taken (such as poisoning or polluting of springs, wells, etc.) under penalty of reprisals.

IX. The right of requisition shall be exercised by the Allied and the United States armies in all occupied territories subject to regulation of accounts with those whom it may concern. The upkeep of the troops of occupation in the Rhineland (excluding Alsace-Lorraine) shall be charged to the German Government.

X. The immediate repatriation, without reciprocity, according to detailed conditions, which shall be fixed, of all Allied and United States prisoners of war, including persons under trial or convicted. The Allied powers and the United States shall be able to dispose of them as they wish. This condition annuls the previous conventions on the subject of the exchange of prisoners of war, including the one of July 1918 in course of ratification. However, repatriation of German prisoners of war interned in Holland and in Switzerland shall continue as before. The repatriation of German prisoners of war shall be regulated at the conclusion of the preliminaries of peace.

XI. Sick and wounded who cannot be removed from evacuated territory will be cared for by German personnel, who will be left on the spot with the medical material required.

II. Disposition Relative to the Eastern Frontiers of Germany.

XII. All German troops at present in the territories which belonged to Austria-Hungary, Rumania or Turkey, shall withdraw immediately within the frontiers of Germany as they existed on August 1, 1914. All German troops at present in the territories which before the war belonged to Russia shall likewise withdraw within the frontiers of Germany defined as above as soon as the Allies, taking into account the internal situation of these territories, shall decide that the time for this has come.

XIII. Evacuation by German troops to begin at once, and all German instructors, prisoners, and civilians as well as military agents now on the territory of Russia (as defined before 1914) to be recalled.

XIV. German troops to cease at once all requisitions and seizures and any other undertaking with a view to obtaining supplies intended for Germany in Rumania and Russia (as defined on August 1, 1914).

XV. Renunciation of the treaties of Bucharest and Brest-Litovsk and of the supplementary treaties.

XVI. The Allies shall have free access to the territories evacuated by the Germans on their eastern frontier either through Danzig or by the Vistula in order to convey supplies to the populations of those territories and for the purpose of maintaining order.

III. Clause Concerning East Africa.

XVII. Evacuation by all German forces operating in East Africa within a period to be fixed by the Allies.

IV. General Clauses.

XVIII. Repatriation, without reciprocity, within a maximum period of one month, in accordance with detailed conditions hereafter to be fixed, of all interned civilians, including hostages under trial or convicted, belonging to the Allied or associated powers other than those enumerated in Article Three, with the reservation that any future claims and demands of the Allies and the United States of America remain unaffected.

XIX. The following financial conditions are required: Reparation for damage done. While such armistice lasts no public securities shall be removed by the enemy which can serve as a pledge to the Allies for the recovery or reparation for war losses. Immediate restitution of the cash deposit in the National Bank of Belgium, and in general immediate return of all documents, specie, stocks, shares, paper money, together with plant for the issue thereof, touching public or private interests in the invaded countries. Restitution of the Russian and Rumanian gold yielded to Germany or taken by that power. This gold to be delivered in trust to the Allies until the signature of peace.

V. Naval Conditions.

XX. Immediate cessation of all hostilities at sea and definite information to be given as to the location and movements of all German ships. Notification to be given to neutrals that freedom of navigation in all territorial waters is given to the naval and mercantile marines of the Allied and associated powers, all questions of neutrality being waived.

XXI. All naval and mercantile marine prisoners of the Allied and associated powers in German hands to be returned without reciprocity.

XXII. Surrender to the Allies and the United States of America of all submarines (including submarine cruisers and all mine-laying submarines) now existing, with their complete armament and equipment, in ports which shall be specified by the Allies and the United States of America. Those which cannot take the sea shall be disarmed of the personnel and material and shall remain under the supervision of the Allies and the United States of America. The submarines which are ready for the sea shall be prepared to leave the German ports as soon as orders shall be received by wireless for their voyage to the port designated for their delivery and the remainder at the earliest possible moment. The conditions of this article shall be carried into effect within the period of 14 days after the signing of the armistice.

XXIII. German surface warships, which shall be designated by the Allies and the United States of America, shall be immediately disarmed and thereafter interned in neutral ports, or for the want of them, in allied ports, to be designated by the Allies and the United States of America. They will there remain under the surveillance of the Allies and the United States of America, only caretakers being left on board. The following warships are designated by the Allies: Six battle cruisers, ten battleships, eight light cruisers, including two mine-layers, fifty destroyers of the most modern type. All other surface warships (including river craft) are to be concentrated in German naval bases to be designated by the Allies and the United States of America, and are to be completely disarmed and placed under the supervision of the Allies and the United States of America. The military armament of all ships of the auxiliary fleet shall be put on shore. All vessels designated to be interned shall be ready to leave the German ports seven days after the signing of the armistice. Directions for the voyage will be given by wireless.

XXIV. The Allies and the United States of America shall have the right to sweep up all mine fields and obstructions laid by Germany outside German territorial waters and the positions of these are to be indicated.

XXV. Freedom of access to and from the Baltic to be given to the naval and mercantile marines of the Allied and associated powers. To secure this the Allies and the United States of America shall be empowered to occupy all German forts, fortifications, batteries and defense works of all kinds in all the entrances from the Cattegat into the Baltic, and to sweep up all mines and obstructions within and without German territorial waters, without any question of neutrality being raised, and the positions of all such mines and obstructions are to be indicated.

XXVI. The existing blockade conditions set up by the Allied and associated powers are to remain unchanged, and all German merchant ships found at sea

are to remain liable to capture. The Allies and the United States of America shall give consideration to the provisioning of Germany during the armistice to the extent recognized as necessary.

XXVII. All naval aircraft are to be concentrated and immobilized in German bases to be specified by the Allies and the United States of America.

XXVIII. In evacuating the Belgian coasts and ports, Germany shall abandon in situ all merchant ships, tugs, lighters, cranes and all other harbor materials, all materials for inland navigation, all aircraft apparatus, materials and stores, all arms and armaments, and all stores and apparatus of all kinds.

XXIX. All Black Sea ports are to be evacuated by Germany; all Russian war vessels of all descriptions seized by Germany in the Black Sea are to be handed over to the Allies and the United States of America; all neutral merchant vessels seized are to be released; all warlike and other materials of all kinds seized in those ports are to be returned and German materials as specified in Article Twenty-eight are to be abandoned.

XXX. All merchant vessels in German hands belonging to the Allied and associated powers are to be restored in ports to be specified by the Allies and the United States of America without reciprocity.

XXXI. No destruction of ships or of materials to be permitted before evacuation, surrender or restoration.

XXXII. The German government will notify the neutral governments of the world, and particularly the governments of Norway, Sweden, Denmark and Holland, that all restrictions placed on the trading of their vessels with the Allied and associated countries, whether by the German government or by private German interests, and whether in return for specific concessions, such as the export of shipbuilding materials or not, are immediately cancelled.

XXXIII. No transfers of German merchant shipping of any description to any neutral flag are to take place after signature of the armistice.

VI. Duration of Armistice.

XXXIV. The duration of the armistice is to be thirty days, with option to extend. During this period, if its clauses are not carried into execution, the armistice may be denounced by one of the contracting parties which must give warning 48 hours in advance. It is understood that the execution of Articles Three and Eighteen shall not warrant the denunciation of the armistice on the ground of insufficient execution within the period fixed except in the case of bad faith in carrying them into execution. In order to assure the execution of this convention under the best conditions the principle of a permanent international armistice commission is admitted. This commission will act under the authority of the Allied military and naval commanders in chief.

VII. The Limit For Reply.

XXXV. This armistice to be accepted or refused by Germany within seventy-two hours of notification.

This armistice has been signed the Eleventh of November, Nineteen Eighteen, at 5 o'clock (a. m.) French time.

F. Foch,
R. E. Wemyss,
Erzberger,
A. Oberndorff,
Winterfeldt,
Von Salow.

On 14 December the armistice terms were renewed for the period ending 17 Jan. 1919, during which the conditions that were unfulfilled were to be completed. To the general terms as given above was added the following provision: "The Allied High Command reserves the right to begin meanwhile, if it thinks it wise in order to assure new guarantees, to occupy the neutral zone on the right bank of the Rhine to the north of the bridgehead of Cologne, up to the Dutch frontier. This occupation will be announced by the Allied High Command by giving six days' notice."

Meanwhile from 12 November the International Armistice Commission was in daily session at Spa, Belgium, in the former seat of the Great German Headquarters. Representatives of the United States, Great Britain, France and Germany attended. Maj. Gen. Charles D. Rhodes and staff represented the United States; with Maj. Gen. Sir Richard C. Haking and staff for Great Britain, and General Nudant and staff for France.

The Germans complied to the letter in the surrender of the stipulated war vessels and gave up every submarine, the total number being 122. These vessels were interned at Harwich, England, while the great vessels of war were interned at Scapa Flow. Further drastic conditions were demanded by the Allies and associated powers in January in renewing the armistice for the month ending 17 Feb. 1919. They included retribution for cruelty by Germans to prisoners of war, restoration of machinery and goods taken from the invaded portions of France and Belgium, the placing in a safe place of German gold then stored in Berlin, German ships to be given over to carry food supplies to European countries, and all submarines on the stocks to be surrendered.

A further revision occurred one month later. The new agreement was signed on 16 Feb. 1919 and provided (1) that Germany must complete the terms of all previous agreements; (2) the armistice can be denounced by one of the contracting parties on three days' notice; (3) it is renewed for an indefinite period; (4) a large part of Posen is relinquished by Germany to Poland; (5) all offensives against Poland must be abandoned. Further provisions regarded the demobilization and disarmament of German forces, upon completion of which certain features of the blockade would be released. For further details of the armistice period see the Events Subsequent to the Signing of the Armistices immediately following.

14. EVENTS SUBSEQUENT TO THE SIGNING OF THE ARMISTICES. The German Armistice Extended.—When the armistice was signed on 11 Nov. 1918 several things that grew out of the war between the Teutonic Allies and the Entente Allies were unsettled and had to run their course. Most of them were connected in one way or another with the sad state of affairs in Russia, while others had to do with the terms of the armistice itself, and still others grew out of the long delay in completing the treaties and getting them accepted by the nations that were parties to the conflict. It now remains to examine these later phases of the war. They should be regarded as the lingering upflaring of the fierce conflagration whose flames had run through hidden piles of national prejudice into the surrounding stubble and threatened at times to bring about renewal of the catastrophe the rest of the world had done so much to suppress. The armistice contained not only certain advanced statements of the terms of peace that were to be incorporated in the treaty and certain acts of submission that Germany was required to make, as the surrender of materials of war and railroad equipment, but it embodied, also, temporary arrangements for the government of occupied regions in Germany, the distribution of food there, and administrative action in carrying out the various agreements of surrender and reparation. Thus the armistice was to a large extent an administrative instrument; and its importance may be understood by remembering that under it the international relations of the chief nations

of Europe and America, with the exception of Russia, were carried on for more than a year.

To execute so large and complicated an agreement was not an easy task. In the first place, Germany was suspected of bad faith at every point. She had only herself to blame; for she had used bad faith as a weapon of war so freely that no one trusted her when she said that she was unable to go further. Was not her republican revolution only a pretense? Many excellent people thought that German rulers had their people so well in hand that they could have them go through the form of a revolution and then change back to the autocracy at the will of the leaders. Against this widespread distrust the Allied leaders could not appeal to their people without producing the impression of being too lenient with the enemy, or something still worse. It was also evident that many Germans felt they had not been beaten, and it was not desirable from the Allies' point of view to have them continue in that opinion. The best assurance that they did not try the same thing again was to make them feel that it did not pay. How to carry the situation through successfully from this point of view was most important.

Still more perplexing was the execution of the terms in the armistice which had been adopted as a means of penalizing Germany for her damages to Belgium and France. She had been required to surrender at once 2,500 heavy and 2,500 field guns, 25,000 machine guns, 3,000 *minenwerfer*, and 1,700 airplanes. This was in the nature of drawing the fangs. She also promised to evacuate France, Belgium, Luxemburg and Alsace-Lorraine at once, to withdraw from the west bank of the Rhine, to place the important military centres of Cologne, Coblenz and Mayence in Allied hands with the region east of the river 30 kilometers from each of these towns. The first came to be occupied by British troops, the second by Americans, and the third by French troops. She was required to hand over in 31 days 5,000 locomotives and 150,000 freight cars in good working order, and 5,000 motor lorries in 36 days. She was to repatriate at once and without reciprocity all prisoners of war and persons taken away from occupied districts to work, she was to withdraw her troops from Rumania, Turkey, Austria-Hungary and Russia and she was to renounce the Treaty of Brest-Litovsk and the supplementary treaties. She was required to surrender 10 battleships, six battle cruisers, five light cruisers (including two mine-layers), 50 destroyers of the most modern type, and to surrender within 14 days all her submarines that were ready for sea and the others as soon as possible. There were many other minor conditions looking to the end of the war; but two provisions made it clear that the war was not to be considered as finished. It was declared that the existing blockade of Teutonic countries was not to be relaxed, except as the Allies might determine in order to save life from starvation, and it was agreed that the armistice was to expire in 30 days, that it might be renewed, and that either party could denounce it for non-fulfilment on giving 48 hours' notice. The general nature of an armistice is to suspend hostilities, the relative strength of the contestants to be left as it is, while the diplomats meet to see if a treaty can be made. The armistice of 11 Nov. 1918 went further than this. In demanding the surrender of war materials and the occupation of the west bank of the Rhine it went beyond the ordinary function of creating a suspension of hostilities without prejudice to either side. It became a sort of surrender by Germany; for she gave up all when she gave up her artillery and fleet, and admitted the Allies to the east bank of her Rhine River. The armistice did not provide for German demobilization. That was not necessary; for the weary soldiers were going home as fast as they could and the new government was but too glad to reduce an army it could neither pay nor control.

The execution of the armistice was a military matter and fell under the jurisdiction of the Supreme War Council at Versailles, at the head of which was Marshal Foch, who was not disposed to take a sympathetic view of Germany's difficulties. In fact, no Frenchman felt disposed to be generous to a foe who had reduced France to the last stage of exhaustion. Germany was in sore distress, no doubt, but her factories were intact: her population and credit were badly smitten, but so were the population and credit of France. It had been Germany's deliberate purpose in the war to reduce French industry to such a state that it could not recover in time to get into the race before Germany had far outdistanced her. Should this design be allowed to have its sway? France and her Allies now had the whip hand: they would be less than human if they did not use the opportunity to reduce the high-handed German plans. The French people demanded firm assurances against the overtopping industrial power of Germany. Thus it happened that when the armistice period of 31 days came to an end there was a demand that it should not be renewed on the same terms. But good feeling predominated and the terms were not changed materially when the period was extended to 17 Jan. 1919.

By the end of another month, however, the dissatisfaction in France was greater and the Germans were forced to agree to hand over to France 58,000 agricultural machines of various kinds and to allow the Allies to hold that part of the fortress of Strassburg that lies on the east bank of the Rhine with the adjacent territory. In discussing these matters Erzberger, the head of the German commissioners, demanded of the Allied commissioners that a preliminary treaty should be made out and submitted to his country, which, he said, had demanded such a treaty six times already. The request was not granted and the German commissioners returned to Berlin feeling that new demands, they knew not how severe, might be made on them when the next day of renewal arrived on 17 February.

By this time the position of France in the negotiations was well defined. She looked for protection against future attacks by Germany; for with the time-honored Franco-Russian alliance gone, she naturally desired protection against a foe in whom was great power of recuperation. She also was keen for getting as

reparation every possible concession out of Germany. The reply to her demand was that if German industry was prostrated to benefit French industry Germany could not be expected to make reparation for the damages done. Perhaps in the French demand there was a disposition to render German industry so weak that it would no longer be a formidable competitor of French industry; and the French demand that the Saar coal fields be given to France and the Silesian fields to Poland seemed to support such a theory. To the American and British delegates this went beyond the principle of a just peace, and they began to act together for restraining France. The agreement of 17 January just mentioned was allowed by them, partly because it seemed wise to satisfy the demand of the French farmers for machinery with which to begin their spring work, and partly because it seemed but a good precaution that if France held Strassburg west of the Rhine the opposite region should be clear of German soldiers. Beyond this they were unwilling to go at that time.

It was evident that as long as the armistice was in the hands of military men it would tend to become more severe. Marshal Foch was a stern commander and looked chiefly to military ends. Matters came to a crisis when on 8 February in a meeting of the Supreme Military Council, President Wilson moved the creation of a Supreme Economic Council to deal with the purely economic matters affecting the relations of the Entente and Teutonic Allies, the council to contain not more than five members from each of the interested states. The suggestion had the approval of the British and not being opposed by the other delegates it was adopted. The Supreme Military Council also voted to add two economic experts to the permanent commission which had the supervision of the execution of the armistice. At a conference held on the same day and at the same place it was agreed that 4,000,000 tons of German merchant ships, passenger and freight, should be placed at the disposal of the Allies under a commission headed by E. N. Hurley to carry home American and Australian troops and to take food back to Europe. This was in accordance with the feature of the armistice by which the Allies undertook to send food into Germany, if it was found to be needed there. Allied experts had been through Germany by this time and reported that while there was sufficient food in the areas behind the former German army, there was great want in the interior, where the inhabitants showed the effects of the blockade very plainly.

The proposition to allow the German ships to take food to Europe brought up the question of payment. It was the purpose of the Allies to allow the Germans to buy food in Allied markets. But where were they to get the money for payment? The thrifty French saw at once that to pay money for food would be to reduce the funds that could be used immediately for reparation purposes, and they objected to such proceedings. At this time the American Congress was considering a bill to make available a fund of $100,000,000 to furnish food to the European countries that needed it. It was supposed at first that a part of the fund could be used to aid the Germans and Austrians, but an amendment was added providing that none of the money appropriated should be used in aiding the enemies of the United States. This halted the negotiations where they were, the Germans steadfastly refusing to hand over their ships until they were assured they would return to them with food.

While this matter was being debated the time approached for another renewal of the armistice. It came just when the Peace Conference was becoming most keenly aroused over the question of reparations and the demilitarization of the Rhine Valley. Marshal Foch, backed by an overwhelming French sentiment, held out on one side, and President Wilson, with the support of Lloyd George, stood on the other. The French press was bitter against President Wilson, and it was evident that it got its stimulus from the government. So tense was the situation that President Wilson was reported to have threatened to urge the removal of the conference from Paris. It was not within the French plan to carry their agitation too far, and at this point Clemenceau agreed to a compromise. It was decided in the Supreme War Council on 12 February that the Germans must demobilize their army to such a number that it would not be feared by the Allies in their demobilized condition, and that they should cease their military operations in Posen against the Poles. On the 17th this decision was submitted to the German delegates. Erzberger, speaking for them, said that the German army was already reduced to 200,000 men. As for the fighting in Posen, he said that the Poles under the Fourteen Points claimed lands that were never Polish and tried to seize them, forcing the Germans to a defensive war. Their protest made no impression, however, and they were compelled to sign a renewal of the armistice on the terms of the Allies. It was some gain that the period was to be indefinite and it could be denounced by either party on three days' notice. They were given the assurance informally that if the armistice was executed the blockade would be lightened. The surrender of the German ships was again taken up and it was suggested that the Germans allow the seized German property in the United States to be sold in payment for the food taken to Germany. Erzberger replied that the German government had no power to take and hand over the property of individuals: that would be Bolshevism. As nothing was done about the shipping at this meeting, the matter came up on 6 March 1919, before the Allied Economic Commission at Spa. Again the Germans refused to give up their ships unless assured that food would be brought back to their own ports. As for payments, they offered to give any security that was demanded. Here the French objected to any pledges which would weaken Germany's ability to pay money in the reparation account. It was the same old *impasse*, but the French showed their hand when they suggested that the United States advance the food and take long-term obligations in payment. It was hard for the United States in the Paris negotiations to live down the idea that they were in the affair to play the part of generous god-mother to suffering nations. When the French realized that no such part

would be taken in the existing crisis they consented to a compromise; but it was not until the commission had adjourned at Spa and the matter came up before the Council of Ten in Paris on 8 March. It was then agreed that Germany could obtain 300,000 tons of food a month and that she was to pay in potash or in some other such product of her country, or by using her surviving credit in neutral countries, or in extreme necessity by dipping into her gold reserve then in Germany. Mr. Herbert Hoover, whose management of food distribution in Belgium and in the United States had made him one of the distinguished men of the day, was placed in charge of the distribution of the food when it arrived on the Continent. The rationing of Austria was held up by Italy in the same way that France interfered in Germany and the affair was adjusted in a similar manner. At the time popular discontent was apparent in most European countries, and it was generally believed that if food was not obtained the people would turn to Bolshevism.

The Revolution in Germany.—The German Empire of Bismarck's making ended with the abdication of the kaiser during the night of 9–10 Nov. 1918. At the same time the king of Württemberg renounced the throne and within two or three days the kings of Bavaria and Saxony were deposed. In rapid succession every other hereditary ruler in Germany passed off the political stage, the former kaiser capping the process when on 28 November he renounced the royal crown of Prussia. In their places were organized revolutionary governments, in which the leaders of the Socialist party played active parts. In imperial affairs the lead was taken by a cabinet with Frederick Ebert for Prime Minister, a leading Socialist who had been placed in the position of chancellor in the last moments of the old régime. But the time was too feverish for a quiet transition from a monarchy to a republic.

Among the opponents of militarism were several different groups, each with its ideal for the government of the country. The example of Russia was before them. In fact, Russian influence had played a considerable part in precipitating the crisis in Germany, and one of the first things was to organize a Soldiers' and Workmen's Council, which proceeded to form a soviet in Berlin. Then came Dr. Karl Liebknecht and Rosa Luxemburg, extreme communists, creating a following who called themselves Spartacides, in allusion to Spartacus who led the Roman slaves in a crusade for freedom. For two weeks the political pot boiled violently. Then good sense began to prevail. On 25 November it was agreed that the Soldiers' and Workmen's Council should be the repository of supreme power provisionally, and it took up the work of organizing the forces of government in a deliberate way, thus showing how much better trained for self-government were the workers of Germany than the workers of Russia. State councils of soldiers and workmen were called on to send deputies to a grand conference at Berlin on 16 December, which, when it met, ordered general elections held for choosing delegates to a constituent convention, the date of election being 16 Jan. 1919. Here was the first step out of the welter of struggling parties. Probably the second was in appointing Gustave Noske to command the military forces of the new government, a man who was true to the government then existing and willing to use the forces of law and order at peril to his own popularity.

The evident trend of things toward a conservative revolution alarmed the Spartacides, who continued to agitate for a Bolshevist régime. Eichhorn, the commander of the Berlin police, was of their party and facilitated their designs. Finally the government felt strong enough to order his dismissal. This was the occasion of a general revolt by the Spartacides. Great processions appeared in the streets, armed and threatening the government. Soldiers were called out and conflicts began on 6 Jan. 1919. The Spartacides were well armed and seized a number of important strong buildings, which they converted into forts. For nine days the city was in a state of actual war, many of the best buildings were looted and otherwise damaged, and it was estimated at the time that 1,300 fell on the side of the rioters. On 15 January Dr. Liebknecht and Rosa Luxemburg were arrested in their hiding places. Mobs assailed them in the street and both were killed, Liebknecht, it was reported, by soldiers while trying to escape his guard, and Rosa Luxemburg by a mob of reactionaries who beat her down in the streets and carried off her body. After this the city returned to a state of comparative order.

Next day came the elections. In the brief period of discussion that had intervened six parties had developed, partly as continuations of older groups. The two Socialist factions, majority and independent, continued to exist, and by their sides arose a group calling itself democratic, persons who wished a democratic government without Socialism. Another group was the Catholic Centre. Two others were the German Nationalists and the People's Party, including in one or the other the wealthy bourgeoisie and the landed aristocracy. The first three could be relied upon to support a republic against monarchy, the last two would favor the old régime, and the attitude of the fourth on such a question was doubtful. Under the circumstances the world waited with anxiety the announcement of the results of the voting. It came after much delay, showing that the Majority Socialists had 166 seats in the Constituent Assembly, the Independents 22, the Democrats 75, the Centrists 93, the German Nationalists 37 and the People's Party 23, with five irregulars, whom the conservative press called "the wild ones." Thus the cause of republicanism had 263 out of the 421 delegates, a clear majority. The election returns showed, also, that it had the support of about 19,000,000 out of the total of 28,000,000 voters. The call for the elections had adopted universal suffrage, which swelled the total number of votes to nearly half of the population and resulted in the choice of 28 delegates who were women.

The Constituent Assembly met at Weimar on 6 Feb. 1919, in the celebrated court theatre altered to serve the occasion. The Spartacides and their sympathizers had demanded that the place be Berlin, but there was too much radicalism in the air at the capital for the quiet deliberations of the Assembly, and Weimar was

chosen. At the first meeting 397 delegates were present. Dr. Eduard David, a prominent leader in the old Social Democratic party, was selected for president of the body. The chancellor under the existing government, Herr Ebert, made an address in behalf of the government. Germany, he said, was "done forever with princes and nobles by the grace of God," and the sentiment was cheered by most of the members. When he referred to domestic problems he was interrupted by the independents, who had come to realize that the trend of sentiment in the Assembly was to ignore extreme Socialistic ideas. On matters connected with the foreign situation, as the armistice and the terms of the coming treaty of peace, there was not the same division of opinion, and it behooved the speaker to dwell on them. Cheers greeted his demand for the immediate release of the 800,000 Germans held prisoners by the Allies and his allusion to the proposed union of Germany and Austria. "We turn," he said, "to all the people of the world for justice. We ask that our economic life be not destroyed. The German people have fought for inner self-determination. It cannot be perfected from the outside." There can be no doubt that the German people believed sincerely that it was a great wrong to weaken Germany's economic life. If we could forget the sad havoc their government had played with the economic life of the rest of the world we might share their opinion. In the hour of subjection they insisted that it was not the German people but the militarists who brought ruin on the world, forgetting that in the first months of the war German professors, German newspapers, German political parties, and even the Socialist party gave the world the most solemn assurance that Germany stood as one man for the war.

On 8 February a provisional constitution, prepared by the Ebert cabinet, was offered in the Assembly and on 11 February it was passed unanimously, to be in force until a permanent constitution was adopted. It provided for a legislature of two houses and a chief executive to be known as the "Provisional State President." An attempt to have a republic formally adopted proved a failure, but the form was nevertheless republican. Next Herr Ebert was chosen President, and immediately the ringing of bells announced to the world that Germany's first ruler elected by her own people had taken the reins of authority. Of the man himself Theodor Wolff, the journalist, said: "Ebert is no shining light, nor has he studied as much as some others, but he is the incorporation of good common sense. When after a day's work he sits behind a good bottle of wine, his hands folded over the table, this natural wisdom shows to the best advantage." It was common sense that had brought Frederick Ebert, the saddler, from low rank to the leadership of his party in time of crisis. At the end of his first year in office his record was clear of notable errors, and he had carried the German government safely through a period of unusual turbulence.

When the Spartacides realized that the Constituent Assembly was overwhelmingly opposed to the rule of the proletariat, they tried to overthrow it. The Berlin Council of Soldiers and Workmen appealed to the state councils of soldiers and workmen, urging them to demand a national soviet on the Russian model. They threatened to call a national congress of soviets as a rival to the Constituent Assembly. The most immediate result of their agitation was the outbreak of workmen's riots in many parts of Germany. In Bremen, Magdeburg, Hamburg, Augsburg, Nuremburg, in many places in Saxony and elsewhere outbreaks occurred, beginning as political protests but generally resulting in looting. The most notable disturbance, however, was in Bavaria, where Kurt Eisner, an Independent Socialist, had made himself the chief authority in November, when the king of Bavaria was forced out of his royal office. He was a fearless man of ability and good sense, probably the most capable of the leaders of the radicals in this period of violent opinion and action. He gave mortal offense to the defenders of the old régime when in a speech at a Socialist congress in Berne he charged that the militarists brought on the war, and in another speech arraigned the management of the German prison camps as cruel to the inmates. On 21 Feb. 1919 he was assassinated by a young lieutenant of the former privileged class as Eisner walked through the streets. The radicals seized the opportunity to break into revolt and one of them shot Auer, Minister of the Interior, as he was about to inform the Diet of the death of Eisner, whom he, as a Majority Socialist, had opposed on various occasions. The disorders continued several days but were suppressed by the authorities, a Socialist government emerging from the disorders with Herr Hoffman at its head.

Now followed three months of critical existence for the existing form of society in central Europe. Germany's Socialism was only skin deep. After it had been three months in power and had progressed far enough in practical politics to begin to make a constitution it became evident that it did not mean to overthrow private ownership nor adopt state control of industry, at least so far as the constitution of the new Germany was concerned. The Socialists had taught the masses to believe that capitalism was the basis of their misery and could hardly complain now if the masses turned against them and followed the fervid preachers of communism. Thus came the feverish springtime of 1919. Fortunately Berlin had the first outbreak, early in March, and suppressed it through the stern measures of Noske, who sent 50,000 soldiers into the city and used cannon freely against the fortified places of the rioters. Five hundred persons were said to have been killed in the fighting that lasted from the 7th to the 14th of March, many of them harmless bystanders. The bitter nature of this conflict showed the government how to deal with the insurgents, and the soldiers remained true to it. Soldiers usually follow a capable government that knows its own mind. Of the three classes of society, aristocrats, middle class and proletariat, the first supported the government and some of the third. The second was the backbone of the majority in the Constituent Assembly.

A week after the suppression of this outbreak a still worse revolt occurred in Hungary. Count Michael Karolyi, a wealthy Hungarian, was a friend of the Entente and was exiled from Austria-Hungary during the war,

taking refuge in France and the United States. Returning to his country as the World War came to its end he raised a revolt against the Hapsburgs. The people accepted him as one who stood well with the victors and who was, therefore, able to soften the expected punishment. They placed him at the head of their government, republican in form, and he formed a cabinet in which the prevailing opinion was moderate Socialism. As an administrator he was not a success and it was soon evident that he could not stave off the dismemberment of Hungary. On 19 March the Allies demanded to be allowed to place troops in the neutral belt set off in the armistice between Hungary and Rumania, the inhabitants of which were almost entirely Magyars. The demand destroyed the prestige of Count Karolyi and placed him in despair so that he resigned, passing the government over into the hands of the Socialists. The new cabinet was mostly inefficient; but among them was Bela Kun, formerly a secretary of Lenin, who was a communist and a man of action. He became Minister of Foreign Affairs, dominated the situation, and formally established a soviet government, announcing that it was in "military and spiritual unity" with Russian Bolshevists. The movement made rapid progress and by the 24th Bolshevism was established in most Hungarian towns.

This revolution had a stimulating influence over the German radicals and they boasted that their own country would follow in the footsteps of Hungary before the end of the year. Strikes were occurring daily, city after city broke into rioting, now Dresden, now Düsseldorf, now Nuremburg, and after them, many others. One week news came that all Saxony was on the point of revolt, later came assurance that Brunswick was in the hands of the radicals. It was estimated that one-third of the workers of Germany were communists, and their feeling was being stimulated by many active agents from Russia, well supplied with funds by the Bolshevist government there. All this came when the Peace Conference was passing through its darkest days, just at the time when President Wilson threatened to leave Paris if the nations at the peace board did not abate their demands for spoils. Moreover, the pinch of hunger was at its highest pitch in these early months of the year when the stocks of the preceding scant harvest were lowest. Many a wise man of the day thought it impossible to keep Bolshevism from sweeping over central Europe from the Danube to the Rhine.

That the tide was stayed was due to the Weimar government under the newly-chosen President, Frederick Ebert. Confident that it had the support of a majority of the workingmen it did not hesitate to use force to put down the local revolts. Its most notable task of this nature was at Munich, where the embers of dissatisfaction had burned since the death of Kurt Eisner. He was not a communist, but the radicals could point to his assassination as an act of perfidy on the part of the capitalistic faction. Early in April Bela Kun arrived in the city from Hungary to plead the cause of the soviets. The next day a new soviet republic was proclaimed by the radicals and it was announced that relations would be established with Russia and Hungary. The Hoffman government moved to Bamberg. To these two governments in Bavaria was added a third a few days later when the communists in the city rose, drove out the soviet government and set up a Council of Ten to rule in true revolutionary fashion, a revolutionary tribunal, according to the newspapers, being set up to try persons suspected of opposing the Ten. This move was met by the Weimar government with the announcement that an army would reduce the communists and restore the Hoffman government. After some delay the troops appeared before the city, led by Noske himself. On 30 April the red army offered to parley, but the only terms offered were unconditional surrender. They hesitated, but 2 May Noske forced the battle and took the city without much resistance, capturing the red leaders, several of whom were shot summarily. It was reported that 5,000 persons were arrested for complicity in the revolt. This course terrified the communist's leaders in Germany. The government had showed ability and determination to enforce order and comparative quiet began to return to the distressed country.

Meanwhile Hungarian Bolshevism was undisturbed. No power existed in Hungary to put it down, and it might have been left to its own course but for its relation to the territorial question. The subcommission of the Peace Conference of Hungarian boundaries interpreting the principle of racial self-determination, reported that Rumania on the east, Jugoslavia on the south, and Czechoslovakia on the north and northwest should have important parts of what had been Hungary. The kingdom had been a series of different races held together by the politically superior Magyars, and now the non-Magyar elements were about to be cut off and Hungary left with nothing more than the rich Danubian Plain. The three states that benefited by the report did not await the action of the Peace Conference, but making the establishment of Bolshevism a pretext massed troops to march into the territory they expected to receive. The diplomats in Paris were in no condition at that time to preserve the *status quo* and sent General Smuts to Budapest to try to make a compromise. His efforts failed and Rumanian, Serbian and Czech armies crossed into Hungary on 25 April. To save its face the conference sent Gen. Franchet d'Esperey to take command in the name of the Allies, but he seems to have exerted little authority over the Rumanians, who marched quickly to the Theiss River and threatened to enter the capital. Bela Kun was thoroughly alarmed and offered to make peace by recognizing the territorial claims of the invaders. At the same time he seized many of the prominent citizens as hostages. In the Rumanian army, led by its king, were many Magyars whose efforts gave the Rumanian invasion the character of a counter-revolution. Bela Kun's soldiers were untrained and unwarlike, and he asked for an armistice with terms. The Rumanians demanded that the communist army be disarmed, war material be surrendered and the hostages be given up, the Rumanians to be left in possession of the right bank of the Theiss for a depth of 12 miles. The Hungarians re-

fused these terms and decided to fight for their existence. At the same time the Peace Conference, not wishing to start a war in Hungary which might lead to problems that could not be settled easily, induced the invaders to stop where they were and imposed a blockade on the Hungarian Bolshevists. They even invited Bela Kun to send an agent to Paris that he might talk over the situation with the view of adjusting all differences. On 24 June 1919 there was a revolt of the conservatives in Budapest, but the communists suppressed the uprising, taking many prisoners. Up to this time Bela Kun had ruled without bloodshed, but now he became severe. He had taken 50 cadets of the military academy who resisted in the telegraph office until they were induced to surrender, and 40 of them were executed summarily. As July passed the effects of the blockade were plainly felt. The hungry inhabitants read a proclamation from the Allies that they would not make peace with their Bolshevist government and murmurings became louder. Finally Bela Kun bowed to the storm and resigned on 31 July, receiving the promise of a safe conduct out of the kingdom. A moderate Socialist cabinet was formed to succeed him.

Then affairs took an alarming turn. The Rumanian army marched on the capital, despite the orders from Paris to keep away, and occupied the city 30,000 strong. The Allies ordered it to withdraw, but it stood in its tracks. On 7 August the Archduke Joseph proclaimed himself governor of Hungary and organized a coalition ministry, and a week later he formed a cabinet out of the friends of the old régime. To most people it seemed that he was taking the country headlong into a Hapsburg restoration and the Hungarians were as much alarmed as the Allies. On 23 August a messenger from the Allies appeared with a peremptory order to the archduke, giving him two hours to resign his assumed governorship, with the alternative of having the order published in Budapest. He yielded with as good grace as possible and the government passed over to a Moderate Socialist cabinet. It then remained to get rid of the Rumanians. By some fancy they had formed a scheme for joining Rumania and Hungary in an economic union and King Ferdinand had come to the city as a conqueror. It was afterward explained that he came incognito. But the pressure of the Allies was not to be ignored. Rumania was given to understand that she would be subjected to economic pressure if she refused to leave the city, and on 14 August she gave notice that she would withdraw. At this time the Allies sent a commission of interallied generals to Budapest, with orders that they should command in rotation. Finally on 7 September the Rumanian army at last began to leave the city and a week later it was announced that British troops would take their places. Thus ended the troubles that were closely related to the Bolshevist revolution in Hungary. In Bela Kun's day the soviet system was established throughout the country. The lands were nationalized, and the government of the proletariat was established. The leader was an honest devotee to the system of Lenin, and tried hard to make his plan work. The opposition from the outside, with the pressure of hunger, was too much for him. But his fall did not overthrow all that he had set up.

While these commotions rocked Germany, the Constituent Assembly continued its work of making a constitution. On 31 July 1919 the completed constitution was laid before the Constituent Assembly, which had changed its name to the National Assembly, and was adopted by a vote of 262 to 76, the negative votes coming from members of the German National and the German People's parties on the one hand and from the Independent Socialists on the other, both extremists. The affirmative votes came from the middle groups and represented the strength of the supporters of republicanism.

The constitution itself is far removed from the old form of government. Though German in character it is essentially republican and in its first clause it declares as much, although the word *Reich* is used to name the government. In the draft itself the legislature was called the *Reichstag*, but a protest was made against the name after the constitution was adopted and it was announced that it would be dropped. The members are to be chosen by the people for a term of four years. There is a President elected by the people for seven years. He represents the government under international law, makes treaties and receives and sends diplomatic agents. He may use the armed forces of the country to preserve order or use them against a defiant state, but in each case his power is subject to a veto by the legislature. He has the pardoning power, but not the right to proclaim amnesty. His orders are to be countersigned by the chancellor or by the ministers whose departments are affected. The chancellor in some respects is a kind of vice-president, but he is also the responsible head of the ministry. He and the other ministers are appointed by the President, in the same way as British ministers are appointed by the king. The chancellor has charge of foreign policy. The legislature, that is the Reichstag, may remove by impeachment the President, chancellor, or ministers when indictment has been brought by a petition signed by 100 members. There is an imperial council in which each state has a representative for each million inhabitants it contains; but each state has at least one representative, and no state can have more than two-fifths of the whole number. Thus the overwhelming influence of Prussia is reduced, and to guard against too much power in the hands of the Berlin voters it is provided that one-half of Prussia's representatives must come from the provinces. Ordinarily the council must consent to all bills introduced into the legislature, but the government may introduce bills known to be disapproved by the council, and laws may be submitted by a plebiscite if the President desires it. A majority vote in the legislature will repeal a law. The constitution may be changed by a two-thirds vote of the legislature, but for this purpose there must be a quorum of at least two-thirds of the members.

The federal character of the German government is preserved, but the powers of the individual states are much reduced. A very large number of powers are specifically assigned

to the central government, as the control over foreign affairs, citizenship, colonies, immigration, customs, posts, telegraphs, railroads, shipping, coinage, weights and measures, motherhood, repopulation, labor conditions, price fixing, the socialization of national resources, paper money, manufactures, theatres and education. The states must have liberal forms of government and grant the suffrage to all men and women in the election of their legislatures. It was specifically provided that an imperial law should be superior to a state law. A citizen of a state is to be a citizen of the empire with equal rights in all other states.

There are many provisions relating to the rights and status of person. Privileges of birth are abolished but titles may be used merely as parts of the names of individuals, and no more titles of nobility are to be conferred. All titles that are created in the future will refer to the occupations of the recipients, but academic titles will be awarded as in the past. Freedom of speech is guaranteed. Especial attention is given to the protection of motherhood, and it is provided that illegitimate children shall have the same moral and social protection as legitimate children. No state church is to exist but all people are to have freedom of belief. Compulsory education is required for all children for eight years with continuation schools in technical, professional or occupational subjects as the ability of the pupils may warrant, but in this connection no distinction is to be made on account of social status or religion. Pupils are to be taught civic ideals "in the spirit of popular Germanism and of international reconciliation." It was probably by design that the supremacy of international law was specifically recognized.

Under the circumstances it was inevitable that the constitution should contain socialistic doctrines; but they are moderate in nature. Private property is "safeguarded by the constitution" and the right of inheritance is guaranteed. Confiscation is not to occur without due process of law and without compensation. Entails are dissolved. "Private economic enterprises" may be taken by the state, but only with compensation, and it can be arranged that when thus taken over the employers and the employees shall participate in their administration under the supervision of the state. Elaborate regulations are made for the protection and functioning of labor. The right of laborers to organize and bargain is recognized, and a national economic council is created and is to be consulted in making laws affecting labor. These provisions are far short of the ideals of the radical Socialists. It remains to be seen to what extent the government will undertake to carry them into practice. The fact that they are mostly permissive seems to indicate that the constitution makers were not willing to endanger the revolution by attempting to establish an out-and-out socialist régime.

Under this constitution Herr Ebert became the first President of the imperial republic of Germany. He was inaugurated 21 Aug. 1919 in the court theatre at Weimar, where the sessions of the National Assembly had been held, a brilliant audience witnessing the ceremony. Only the seats of the Independents and the German Nationalists were vacant. "It is a thorny office," said the president of the assembly in inducting him into office, "which in the hardest times the Fatherland has laid upon your shoulders, but with an easy conscience you can claim to be free from all blame or responsibility in the country's wretched position." It was a true speech. The task of the President is severe. National bankruptcy threatens, the obligations of the peace treaty must be met, and precautions against a counter-revolution must be taken. The hope of the future for Germany is in the common sense of the German people and their leader.

One of President Ebert's first difficulties was the withdrawal of the army of General von der Goltz from the Baltic provinces, where it had remained under the pretext of keeping the Bolshevists back. Its commander was one of the best leaders of the Junkers, and it was believed that his force was but a rallying point for monarchists in anticipation of the time when he would proclaim a restoration of the Hohenzollern dynasty. To the protests of the Allies at Paris little attention was paid. Finally they became insistent and announced that they would restore the blockade against food for Germany if the troops were not recalled. The threat proved effective and on 4 Oct. 1919 the troops began to leave the provinces. They had numbered about 40,000 and President Ebert was probably as pleased as the Allies themselves to see them demobilize.

Another incident that aroused feeling between the Allies and Germany was the demand that Germany should make restitution for sinking the German naval ships at Scapa Flow as the treaty of peace was about to be signed. The British found in the cabin of one of the ships when she was raised to the surface a letter from the government which seemed to authorize the admiral in command to sink the ships. As they were surrendered as pawns of war the Allies demanded that a specified amount of tonnage in merchant ships should be surrendered. After many protests an agreement was made by which Germany promised to surrender merchant tonnage in satisfaction of the claim. The acceptance of the terms removed the last obstacle to exchange of ratifications, and that last act of the process of making the treaty was consummated at Paris 10 Jan. 1920, when Germany, Great Britain, France, Italy, Japan and many small nations exchanged ratifications and brought their war to an end. The United States was not represented at the ceremony since the treaty was still under consideration in the Senate.

The Bolshevist War in Russia.—The Russian Bolshevist government concluded an armistice with Germany 15 Dec. 1917 and accepted the treaty of Brest-Litovsk 3 March 1918. Lenin, its guiding mind, accepted the terms reluctantly and it was understood that he would not carry them out if he could help it. But time was needed to organize the revolution, and the peace, bad as it was, gave him time. The empire was crumbling at the edges and it was freely predicted that it would break up into small states. Finland, the Baltic provinces, Poland and the Ukraine seemed assured of separate existence in the European part of the old empire, and it was not possible to predict what would happen with Siberia. But the main

portion of European Russia was in the hands of the Bolshevists, a minority of the population, and they were striving hard to retain the position of authority they had assumed. A social and industrial class well organized under the repression of the old government, supplied with a trained and devoted corps of leaders, and convinced of its purposes, they had the advantage of being the only authority that commanded obedience.

The outside world had some difficulty in discovering just what kind of a government they were setting up. That it was driving along the same course that the French revolution followed was clear and as reports came of terror after terror in "Darkest Russia" the outside world became horrified. The former tsar was executed 17 July 1918 and his immediate family is said to have been killed soon afterward. There is good evidence that the horrors were not all on one side. Stories from the returned agents of other governments indicate that some of the severest repression was committed by the anti-Bolshevists in the towns they took from the Bolshevists. It was class war in its worst form, and to most non-Russian people it was horrible — so horrible that time is necessary to discover its real nature.

At bottom, the system rests on the soviet, the unit of the organization. Each factory or shop had its organization of workers before the revolution, with central organization, and they had come to look upon themselves as a kind of invisible government organized and ready to spring into life when opportunity offered. Strong leaders went and came among them, and when they proved themselves too strong for their own safety they fled to neutral countries. The revolution of 15 March 1917 opened the doors for their return, and once back they made their plans to seize the government. There is reason to believe that they had honeycombed the old army with their invisible organization. They believed it was *their* revolution and struggled to keep it from passing into the hands of the bourgeoisie, whom they considered their enemies. Thus the workmen and soldiers, organized by soviets, became the governing portion of society. When they came into power the revolution was 10 months old. They found the peasants, a large majority of the population, in possession of the landed estates and extremely fearful lest a counter-revolution dispossess them. With the peasant they formed a kind of bargain, allowing them representation in the central soviets at a rate unequal with the workmen. Against the upper classes they warred consistently. To vote one must be a member of the soviet, and to join it one must be a workingman. The lack of food aided Lenin. There was, he announced, a certain amount of food and he allotted it to the workers first. If a rich man would not work he might die of starvation. Another thing that helped Lenin was the fact that his enemies were supported by foreign powers, and by France and Great Britain in particular. These two states had loaned Russia vast sums before and during the war. They were now fighting, said the Bolshevists, in order that these loans be made secure. According to their philosophy the war was fought by these two countries to save the investments of rich men through sacrificing the lives of poor men. They also had an advantage in the existence of many political parties in Russia, small organizations that had sprung up in the early days of the revolution, each with an idealistic or social *raison d'être* that made it difficult to obtain union against the common foe.

It was 26 Jan. 1918 when the Bolshevists dissolved the Constituent Assembly in Petrograd, met to make a constitution, and took the direction of affairs. At that time no armed opposition to the government existed. The Tsarists, largely an officer class, had made no attempt against the revolution. But opposition to the Bolshevists appeared in several quarters. In the first place, the suppressed races on the western border, Poles, Finns and Baltic people, had assumed independence and were in arms to defend themselves against reconquest. They were not anti-Bolshevist so much as anti-Russian, but they served to weaken the Bolshevists while others were fighting them. Elsewhere the Bolshevists were opposed by three large groups of armies who fought in the name of anti-Bolshevist Russia. In them were various kinds of Russians, some of them supporters of the Duma, the republican government which sprang up after the tsar was forced to abdicate. Some were defenders of the old bureaucracy, and others were Socialists who rejected the communism of the Bolshevists. Between these widely different elements was at first a tendency to subordinate differences and give all their efforts to the one aim of defeating Lenin. But in time jealousies grew up and seriously weakened the efforts that were put forth.

The strongest of these forces was that which Admiral Kolchak commanded in Siberia. When the revolution occurred a Socialist government was set up in Siberia, but after the fall of Kerensky it was replaced by a Bolshevist government, which might have continued to exist but for the appearance of the Czechoslovaks. These people were a body of prisoners taken from the Austrians, who fought in the last days of the old Russian régime against Austria, whom they hated. When the Russian front gave way they were left to their own resources. They dared not go back to Austria, where they were considered traitors. They were opposed to the Bolshevists and were attacked by them. Defending themselves they moved into the region east of Moscow and finally were promised that they might go through Siberia to Vladivostok and thence by water to Italy, where they would be thrown against Austria, their most hated enemy. The Bolshevists soon repented of this promise and opposed their departure, so that the Czechoslovaks had to cut their way out of Russia in Europe. They managed to capture $200,000,000 in gold from the Bolshevists at Kazan and carried it with them to Omsk. While they were falling back a meeting of anti-Bolshevist factions was held 24 Sept. 1918 at Ufa and an All-Russian Directory was created. Soon after it made Omsk its headquarters. Here there was an Omsk government already organized on a broad basis, that is, it embraced all who favored the overthrow of the Bolshevists and it had, in general, a leaning toward liberal government. The Directory, however, was strongly Socialist and retained in its army the committees which had broken down the disci-

pline of the old army. The natural result was a clash and on 28 November a group of Cossack officers arrested the leading directors and declared the government non-existent. In their place they proclaimed Admiral Kolchak supreme regent. This excellent officer had come to Omsk from Vladivostok and thrown in his fortunes with the Omsk government. He soon showed good organizing ability and for a time was the hope of the anti-Bolshevists in Siberia. He was, however, essentially a military man. Although he promised the people who supported him a constitutional form of government, he did not keep his word for many months. He accordingly was distrusted as a reactionary and eventually lost the cordial support of many of his own followers. He took no steps to settle the land question, probably because to do so would alienate either the landlords or the peasants, both of whom he needed as supporters. Nor did he call a Constituent Assembly, probably for the same reason. He did, however, declare for universal suffrage, but it was evident that the Constituent Assembly when it met would not be bound by such a declaration. For over a year after his elevation he ruled effectively. He received large quantities of supplies from the Allied Powers, and the Czechoslovak forces were ordered by the Allies to stay where they were and keep the Trans-Siberian Railroad safe from local Bolshevists, while a joint Japanese-American force that was landed in Vladivostok kept the port open for communication with the outside world. A force of American engineers under Mr. John F. Stevens kept the trans-continental railroad in repairs. Kolchak's government conscripted the men of fighting age or received them as volunteers, and British and French officers trained them into an army. In the spring of 1919 he began an advance into European Russia and nearly reached Samara, where the railroad crosses the Volga, less than 600 miles from Moscow and more than 1,000 miles from Omsk. While he was advancing, other anti-Bolshevist forces were also pressing back their foes, so that he seemed to be on the verge of victory. But it was impossible to conduct a campaign against a numerous enemy with only one railroad to bring up supplies more than 1,000 miles, and he was forced to fall back. Some of his conscripted Siberians were not loyal and deserted to the Bolshevists. The enemy followed him across the Ural Mountains, and by autumn they were threatening Omsk itself.

Meanwhile, the second army resisting the Bolshevists was operating in the south. Here a force known as the Volunteer Army was organized soon after the Bolshevists became supreme in Moscow. At first a small body of persons who had come together in protest against the doings at Moscow and Petrograd, it was at length joined by the Don Cossacks, a large and devoted body of good fighting men. About the beginning of the summer of 1918 this force was under the command of Denikin, a capable leader and administrator. Fighting through the summer, autumn and early winter he cleared the northern shores of the Black Sea of Bolshevists and drove them out of the southern part of the Ukraine which had fallen into Bolshevist hands when the German troops were withdrawn after the signature of the armistice, 11 Nov. 1918. At this time Denikin was recognized as supreme authority by the Volunteer Army and by the Don Cossacks; but he announced that he was under the supreme command of Kolchak. In this position of subordination he was relieved of the necessity of devising a political policy, a thing which would certainly have embarrassed him sorely, since he had under him peasants, Socialists and bureaucrats. In public he professed to believe in universal suffrage, but he opposed the division of Russia and was not clear in his pronouncements on the distribution of lands. Like Kolchak he was a good military man but without good political sense.

The third anti-Bolshevist force was the Provisional Government in northern Russia, based on the coast at Archangel and Murmansk. It was organized at the suggestion of the Allies out of persons who opposed Bolshevism early in August 1918. Tchaikovski was its chosen head, a leader of the Social Revolutionists. His policy was to put down the Bolshevists and then to settle things in a Constituent Assembly. He was promised and received a body of troops composed mostly of British and American soldiers, with enough from other Allied Powers to make it possible to refer to it as an interallied army. The arrival of these troops in the summer of 1918 gave the Allies the hope that they could penetrate to Petrograd, rally the Russian conservatives and re-establish the Eastern Front. The Bolshevists offered such effective resistance that Tchaikovski did not get far from his bases of supplies. By the spring of 1919 it was evident that little was to be expected from the expedition. In the United States and in Great Britain the labor element demanded the withdrawal of the troops, and by the end of October 1919 all the Allied forces had been withdrawn except some technical units whose services were deemed essential to the country. At the end of the year the purely Russian government of the north continued to exercise authority in a narrow region, but it seems to have been because the Bolshevists were giving their attention to more important operations in other sections.

In the early autumn of 1919 the forces opposed to the Bolshevists of Europe were holding a line of strategic positions that ran with a great sweep from Archangel to the Volga. Loosely connected with the northern Russian front was the line of the Finns to the Gulf of Finland. South of the gulf the Baltic States, Esthonia, Latvia and Lithuania, carried the line southward to the Poles, who carried it to the south until it nearly reached the left flank of Denikin's army, which after an interval ran eastward to the Volga. Denikin's front itself was 700 miles long, held by posts. In October this long line became active at two points and for a time such rapid gains were made that the Allied press jubilantly predicted the imminent collapse of Bolshevism. The first was on the Baltic front, where there was an army of Russians, Letts, Esthonians and Lithuanians under General Yudenitch, operating between Dvinsk and Gatchina. On 13 October Yudenitch began a quick advance on Gatchina and took it, bringing his forces within 25 miles of Petrograd on its south side. At the same time Deniken was more than ordinarily active in the region

south of Moscow, taking Orel about 400 miles from that city. Both actions seem to have taken the Bolshevists unawares, with the result that they offered little resistance. The anti-Bolshevists took this to mean that their enemy was demoralized, and they formed rosy hopes of his speedy collapse. Predictions ran that Yudenitch would take Petrograd and Denikin would take Moscow in a short time. In fact Yudenitch arrived at Tsarskoe-Selo and Tavlovak, 17 and 15 miles respectively from Petrograd. But after a week of fighting he found the resistance stiffer. Trotsky had arrived in Petrograd and put new courage in the defenders. A few days later the Bolshevists brought up heavy reinforcements, outflanked Yudenitch and forced him back into the boundaries of Esthonia. Yudenitch's army was greatly diminished by desertions to the Bolshevists.

At the same time the tide turned in the south. Denikin's advance toward Moscow was suddenly interrupted and he was forced back, his soldiers left him for the Bolshevists in large numbers, and the Bolshevists began a counter-movement, which by 10 Jan. 1920 had carried them to the Sea of Azof at Rostof-on-the-Don, thus cutting Denikin's forces into two parts. At the same time they threw a column around his eastern flank, and it was reported that they had taken Krasnovodsk, on the eastern shore of the Caspian, opposite Baku, and the point from which a railroad runs to the Persian border at a distance of 300 miles. It was further reported that Bokhara, within 20 miles of the Afghan frontier, was also in their hands. In the trans-Caspian region they seem to have encountered little opposition; but they won a position of great danger to the British in India, where there was already great unrest. Nor was this the limit of their successes. In Siberia Bolshevist pressure was applied against Kolchak, already weakened by the dissatisfaction his incompetency in administration was producing. When the Bolshevists crossed the Ural Mountains his troops deserted by the thousand. He swore stoutly that he would never give up Omsk, where he had a vast store of supplies and railroad material. But almost immediately he was forced to flee or be surrounded by the active Bolshevist cavalry. Turning eastward he carried what supplies he could but had to abandon large quantities. He lost 39,000 of his men as prisoners, 5,000 loaded railroad cars and 75 locomotives. His objective was Tomsk, 600 miles east of Omsk, but he was not able to stand there and continued to Krasnoyarsk, 375 miles farther east. On 9 January it was reported that he had been forced out of this position and was in retreat on Irkutsk, on the west shore of Lake Baikal and 1,562 miles east of Omsk, where his retreat began. Meanwhile his civil government had undergone a revolution, for which his ruthless violations of personal liberty were responsible. Kerensky, in Paris, declared that his administration was "a shameless and unpunished system of pillage." The Czechoslovaks in Vladivostok revolted against him, but were put down by one of his representatives, with the passive assistance, it seems, of the Japanese. Of these Oriental people 80,000 were said to be in the region around Vladivostok. The government of the United States had viewed their possible active intervention in Siberia with great concern, and for this reason chiefly, the Japanese had played a waiting game in eastern Siberia. But the approach of the Bolshevists along the transcontinental railroad was a threat at their own safety; and they announced that they would not idly see Bolshevism planted in Manchuria. At the same time they declared that they would not appropriate any territory they might occupy in eastern Siberia. It was assumed that they would meet the Bolshevist advance at Lake Baikal and try to halt it there.

Thus, at the beginning of the year 1920 the fortunes of Bolshevist Russia were good. On the southeast and east her enemies were all but crushed. On the west the Baltic states were ready to give up the struggle. Esthonia held a conference with them at Dorpat in December, in which a treaty of peace was all but made on the basis of mutual recognitions of independence and the renunciation by Esthonia of her alliance with the Western powers. The negotiations broke off, however, when the Bolshevists demanded that the Esthonians expel or intern the remnant of the army of General Yudenitch, which had taken refuge within their borders. The Western powers insisted that this army be left where it was in order that it might at least serve to hold Bolshevist troops in the west who might otherwise be sent into the southeast. Representatives of Latvia, Lithuania, Poland and Finland were at Dorpat informally, and it was believed that they would have favored the treaty offered to Esthonia, if it could have been accepted. Early in January 1920 the Esthonians made an armistice with Bolshevist Russia, and it was announced that Yudenitch's army would be sent by water to join the anti-Bolshevists in southern Russia.

With established peace on their western border and victories won in the Far East, Russian Bolshevism presents itself as one of the most important results of the World War. So far it seems to have succeeded in uniting the Russian Empire, except for the Baltic states and Poland, which in 1917 was considered a difficult thing to do. It has been strengthened at home by the political incompetence of the anti-Bolshevist Russians and by the fact that it was the most promising force in Russia for national unity. It is not a democratic form of government: in its present state it is as autocratic as the government of the tsar. It sets out to force every man to become a proletarian, and then it means to keep him a proletarian until all men choose to remain in that state. If that condition is reached the coercion of the leaders may be relaxed, and Bolshevism may become democratic. It remains to be seen how it can swing itself into the world movement for self-government which has been the underlying force in political development for the past seven centuries. At present that seems to be the most serious problem of the Bolshevists.

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15. DIPLOMATIC NEGOTIATIONS BY THE VARIOUS NATIONS DURING THE WAR. United States.— On 4 Aug. 1914, seven days after Austria-Hungary had declared war on Serbia, President Wilson

issued a formal proclamation of American neutrality. In this document he summed up the laws and principles of international law which persons residing in the United States must obey in order to observe neutrality, and, on the other hand, warned the belligerent powers not to infringe upon the rights of neutral peoples. Citizens of the United States were prohibited from originating a military force in aid of a belligerent, and were warned that while they might manufacture and sell within the United States arms and munitions of war, they must not transport such articles upon the high seas for the use of a belligerent.

On the subject of wireless communication President Wilson issued a special proclamation on 5 August. "It is now ordered," he said, "by virtue of authority vested in me to establish regulations on the subject, that all radio stations within the jurisdiction of the United States of America are hereby prohibited from transmitting or receiving for delivery messages of an unneutral nature, and from in any way rendering to any one of the belligerents any unneutral service during the continuance of hostilities."

These proclamations were followed by another on 18 August appealing to the American people for a broad observance of the spirit of neutrality. "The effect of the war upon the United States will depend upon what American citizens say or do. Every man who really loves America will act and speak in the true spirit of neutrality, which is the spirit of impartiality and fairness and friendliness to all concerned. The spirit of the nation in this critical matter will be determined largely by what individuals and society and those gathered in public meetings do and say, upon what newspapers and magazines contain, upon what our ministers utter in their pulpits and men proclaim as their opinions on the streets. . . . I venture, therefore, my fellow-countrymen, to speak a solemn word of warning to you against that deepest, most subtle, most essential breach of neutrality which may spring out of passionately taking sides. The United States must be neutral in fact as well as in name during these days that are to try men's souls."

In the first days of the war the firm of J. P. Morgan and Company was approached upon the subject of financing a loan of $100,000,000 to the French government, the proceeds of which were to be used exclusively to establish a credit for the purchase of American goods by the French people. The transaction was interrupted, however, by the announcement of Secretary Bryan, on 15 August, that "loans by American bankers to any foreign nation which is at war is inconsistent with the true spirit of neutrality."

The superiority of the Allied Powers upon the sea made it impossible for the Central nations to import munitions from America. Therefore, they held it unneutral for the United States to sell powder, guns or shrapnel to any of the belligerents. On 15 October Robert Lansing issued a statement giving the official interpretation of the Department of State upon the obligations of neutrals in this matter. "In the first place," he said, "it should be understood that, generally speaking, a citizen of the United States can sell to a belligerent government or its agent any article of commerce which he pleases. He is not prohibited from doing this by any rule of international law, by any treaty provisions or by any statute of the United States. It makes no difference whether the articles sold are exclusively for war purposes, such as firearms, explosives, etc., or are foodstuffs, clothing, horses, etc., for the use of the army or navy of the belligerent. Furthermore, a neutral Government is not compelled by international law, by treaty, or by statute to prevent these sales to a belligerent. Such sales, therefore, by American citizens do not in the least affect the neutrality of the United States. It is true that such articles as those mentioned are considered contraband and are, outside the territorial jurisdiction of a neutral nation, subject to seizure by an enemy of the purchasing Government, but it is the enemy's duty to prevent the articles reaching their destination, not the duty of the nation whose citizens have sold them. If the enemy of the purchasing nation happens for the time to be unable to do this, that is, for him, one of the misfortunes of war; the inability, however, imposes upon the neutral Government no obligation to prevent the sale."

Despite this clear statement several bills were introduced into Congress, when it convened in December, to place an absolute embargo upon the exportation of arms and munitions of war to belligerent nations. Although great pressure was brought to bear on senators and representatives to vote for these measures, by German sympathizers, especially in the Middle West, they failed of passage.

Secretary of State Bryan further elucidated the position of the government of the United States on this important point. "Those in this country," he said, "who sympathize with Germany and Austria-Hungary appear to assume that some obligation rests upon this Government, in the performance of its neutral duty, to prevent all trade in contraband, and thus to equalize the difference due to the relative naval strength of the belligerents. No such obligation exists; it would be an unneutral act, an act of partiality on the part of the Government, to adopt such a policy if the Executive had the power to do so. If Germany and Austria-Hungary cannot import contraband from this country it is not, because of that fact, the duty of the United States to close its markets to the Allies. The markets of this country are open upon equal terms to all the world, to every nation, belligerent or neutral."

Neutral Trade.— The war from the outset involved the United States in a diplomatic struggle for the preservation of its rights as a neutral. It became the purpose of Great Britain to prevent Germany from obtaining supplies of a warlike character from overseas countries. In this she could not fail to run counter to the interests of the United States, as that country was the great storehouse to which Europe must turn for everything it needed during the herculean struggle. In fact the situation was in many ways analogous to that during the years preceding the War of 1812, when the United States suffered so severely from the British Orders in Council and the commercial decrees of Napoleon Bonaparte.

The Declaration of London, signed by the

representatives of 10 leading powers in 1908, was intended to supply an international code relative to the matter of blockade, contraband, continuous voyages, convoy, unneutral service and indemnity for seizure. The declaration contained specific schedules of contraband and also a list of articles which should never be classed as contraband, this list to include cotton, rubber, metallic ores and other raw materials. Unfortunately, however, it was ratified by only one power — the United States.

At the outbreak of war the American government directed its representatives to inquire of the various belligerent countries whether they would agree that the Declaration of London be applicable to naval warfare during the conflict. Austria-Hungary and Germany assented, but Great Britain "decided to adopt generally the rules and regulations in question, subject to certain modifications and additions." These additions were found to contain a new list of contraband, much more extensive than that agreed upon by the delegates of the London conference. As the terms of the declaration required its acceptance as a whole the American government then withdrew its suggestion and announced that it would insist that its rights be defined only by the existing rules of international law and the treaties of the United States with the belligerents.

The problem for Great Britain was how to control trade to her enemies through neutral countries. The extent to which she could injure the Central Powers depended upon her ability to prevent transshipment of goods sent from overseas countries to Holland, Denmark, Italy and other neutral powers. On 30 October 1914 she ruled that conditional contraband consigned to a neutral port was liable to seizure when the ultimate destination was plainly the enemy.

On the list of conditional contraband was placed foodstuffs, and over this there soon developed a controversy with Holland and the United States. The British government claimed also the right to prevent the Germans from being fed through Holland by holding up shipments of food in excess of Dutch needs. Her attitude in regard to other conditional contraband was similar.

Late in September two cargoes of copper were seized and requisitioned by Great Britain. In October three more shipments consigned "to order" in Italy were detained at Gibraltar. This was followed by the seizure of three American tankers, the *John D. Rockefeller*, the *Brindilla* and the *Platuria*.

Commerce was further endangered by the planting of mines by the various belligerents. Great Britain abstained entirely from the use of mines in neutral waters during the first two months of the war, but found it necessary to adopt counter-measures in order to cope with the German policy of mine-laying. On 3 Nov. 1914 the British admiralty declared the whole North Sea a military zone. "Within this area merchant shipping of all kinds, traders of all countries, fishing craft, and all other vessels will be exposed to the gravest dangers from mines which it has been necessary to lay and from warships searching vigilantly by night and by day for suspicious craft." In justification of this it was declared that the Germans had scattered mines on the main route from the United States to England and that peaceful ships had already been blown up by this agency.

Injury done to the commerce of the United States by the policy of Great Britain finally brought forth, 26 Dec. 1914, a protest from the government. It viewed with concern, it said, "the large number of vessels laden with American goods destined to neutral ports in Europe which have been seized on the high seas, taken into British ports, and detained sometimes for weeks by the British authorities."

On 7 Jan. 1915 a preliminary reply was sent. His majesty's government concurred, it said, in the principle that neutrals should not be interfered with by a belligerent save when absolutely necessary to protect its safety, but claimed the right to interrupt contraband destined for an enemy country. As to the extent of British interference there had been much misconception. Exports from New York to Denmark, Sweden, Norway, Italy and Holland for the month of November 1914 were more than twice as great as for November 1913. "That the existence of a state of war on such a scale has had a very adverse effect upon certain great industries, such as cotton, is obvious; but it is submitted that this is due to the general cause of diminished purchasing power of such countries as France, Germany and the United Kingdom, rather than to interference with trade with neutral countries." The British government pointed out that the exports of copper and foodstuffs to neutral powers adjacent to the Central nations had increased rapidly and that the presumption was clear that the bulk of the shipments were intended not for their own use, but for belligerent peoples.

"We are confronted with the growing danger that neutral countries contiguous to the enemy will become on a scale hitherto unprecedented a base of supplies for the armed forces of our enemies and for materials for manufacturing armament."

The German government now took a step which further complicated the problems of neutrals. On 26 Jan. 1915 the Federal Council proclaimed the nationalization of food supplies, and seized all stocks of corn, wheat and flour. Although the government gave formal assurance that foodstuffs imported from the United States would not be used for military or naval purposes, the effect upon British policy was inevitable. On 22 January the *Wilhelmina*, loaded with flour, grain and other foodstuffs, cleared from New York for Hamburg. "The new German decree . . . creates a novel situation," declared the British foreign office in a statement issued 4 Feb. 1915, "and it is probable that if the destination and cargo of the *Wilhelmina* are as supposed, the cargo will, if the vessel is intercepted, be submitted to a prize court in order that the new situation created by the German decree may be examined and a decision reached upon it after full consideration." The *Wilhelmina*, under stress of weather, entered Falmouth Harbor 9 February where she was seized and her cargo held for the prize court.

Germany now took a step of the utmost importance to neutrals. Feeling her helplessness against the British battle fleet, she deliberately determined to wage against her shipping a war

of extermination with submarines. On 4 Feb. 1915 she established a war zone about the British Isles. "The waters around Great Britain, including the whole of the English Channel, are declared hereby to be included within the zone of war, and after the 18th inst. all enemy merchant vessels encountered in these waters will be destroyed, even if it may not be possible always to save their crews and passengers. Within this war zone neutral vessels are exposed to danger since, in view of the misuse of the neutral flags ordered by the Government of Great Britain on the 31st ultimo and of the hazards of naval warfare, neutral vessels cannot always be prevented from suffering from the attacks intended for enemy ships."

A few days later Great Britain submitted a second note to the United States concerning trade restrictions. Touching the important matter of foodstuffs, it said, "An elaborate machinery has been organized by the enemy for supply of foodstuffs for the use of the German army from overseas. Under these circumstances it would be absurd to give any definite pledge that in cases where the supplies can be proved to be for the use of the enemy forces they should be given complete immunity by the simple expedient of dispatching them to an agent in a neutral port. The reason for drawing a distinction between foodstuffs intended for the civil population and the armed forces itself disappears. In any country in which there exists such tremendous organization for war as now obtains in Germany, there is no clear division between those whom the Government is responsible for feeding and those whom it is not."

In the meanwhile Germany hastened to urge the United States to defend its right to ship foodstuffs to belligerents for civilian use, by protesting against the seizure of the *Wilhelmina*. Should Great Britain use her naval supremacy to cut off all overseas supplies, the effect upon the Central Powers would be most serious. Through Count von Bernstorff, her Ambassador at Washington, she offered assurance that the imported foodstuffs would be consumed by the civilian population exclusively. On 15 Feb. 1915 the Ambassador presented a note in which Germany offered to recede from the submarine campaign in return for the strict adherence of Great Britain to the rules of the Declaration of London. The United States promptly transmitted this note to the British Ambassador.

Sir Edward Grey replied in a note of 19 Feb. 1915. Pointing out that the brutal treatment accorded the Belgians by Germany, the destruction of merchant ships and innocent lives by the German mines, the firing on undefended British towns by German cruisers, the bombing of cities by airships, he declared it right for England "to take retaliatory measures even if such measures were of a kind to involve pressure on the civil population."

On 20 Feb. 1915 the United States addressed to Great Britain and Germany identical notes suggesting a basis of settlement founded on expediency rather than on international law. It was proposed that neither should sow floating mines on the high seas, or in territorial waters, that neither plant on the high seas anchored mines save within range of harbors; that neither use submarines to attack merchantmen save for the purpose of visit and search; that each forbid its merchant ships to use neutral flags as a *ruse de guerre*. Germany was to promise that foodstuffs imported from the United States should be consigned to agencies designated by the American government which should have entire charge of their distribution, and that such foodstuffs were not to be requisitioned by the German government. Great Britain was to agree not to make foodstuffs absolute contraband and not to interfere with them when consigned to American agencies in Germany.

The German government replied that it was prepared to agree to the proposal concerning floating mines, but would not renounce the use of anchored mines for purposes of offense. It practically accepted the provision concerning submarines, but insisted that the merchant vessels attacked must be unarmed and not resist by force. The regulation of importation of food seemed to be in general acceptable, but Germany insisted that enemy governments must allow also the admission of the raw materials on the list of the Declaration of London.

That the American compromise was entirely unacceptable to Great Britain was made clear by an announcement which she issued jointly with France, concerning the German war zone decree, and the retaliatory measures decided upon. "The German declaration substitutes indiscriminate destruction for regulated captures. Germany has adopted this method against the peaceful trader and the non-combatant, with the avowed object of preventing commodities of all kinds, including food for the civilian population, from reaching or leaving the British Isles or northern France. Her opponents are, therefore, driven to frame retaliatory measures in order in their turn to prevent commodities of any kind from reaching or leaving Germany. These measures will, however, be enforced by the British and French governments without risk to neutral ships or neutral non-combatant lives, and in strict observation of the dictates of humanity. The British and French governments will, therefore, hold themselves free to detain and take into port ships carrying goods of presumed enemy destination, ownership or origin. It is not intended to confiscate such vessels or cargoes unless they would otherwise be liable to confiscation. Vessels with cargoes which sailed before this date will not be affected." The word blockade was purposely omitted from the note, but the measures announced were plainly a blockade of the German coast.

This measure, which threatened to end all direct commerce between Germany and overseas countries, caused great dissatisfaction in the United States. On 5 March Secretary Bryan addressed a note to Great Britain and France asking how the embargo on German trade was to be enforced. In proposing to take into custody all ships trading with Germany, they had claimed a right belonging only to a state of blockade. Yet neither vessels nor cargoes were to be confiscated unless otherwise liable to condemnation, which proposed a course of action as if no blockade existed. In his reply of 13 March 1915 Sir Edward Grey ad-

mitted that his government proposed "to establish a blockade to prevent vessels carrying goods for or coming from Germany." The failure to claim the right to confiscate ships or cargoes was due only to reluctance to exact from neutral vessels all the penalties of a breach of blockade.

At the same time a long memorandum was handed Ambassador Page, containing Great Britain's reply to the American suggestions concerning a basis of concessions. The German government, it said, had not accepted the proposals, and it might appear that to point to this fact would be for Great Britain a sufficient answer. But it desired to make a fuller statement of its whole position. Great Britain, in her conduct of the war, had observed strictly the rules of international law and the dictates of humanity. Germany, on the other hand, had been guilty of many grievous offenses; it had maltreated the civilian population of Belgium and northern France, it had been cruel to British prisoners, it had bombarded open coast towns, it had bombed by aircraft places of no military importance. Germany as well as the Allies had declared a blockade. "The difference between the two policies is, however, that while our object is the same as that of Germany, we propose to attain it without sacrificing neutral ships or non-combatant lives, or inflicting upon neutrals the damage that must be entailed when a vessel and its cargo are sunk without notice, examination, or trial."

Great Britain was unquestionably within her rights in stopping direct trade with Germany, but an attempt to blockade trade with neutral countries to prevent possible access to German territory was a far more dubious matter. Stirred to action by a guarded reference in the order to the possible necessity of blockading neutral ports the United States government, in a note of 30 March, took occasion to enter a new protest. "Such a blockade," it said, "would constitute, were its provisions to be actually carried into effect as they stand, a practical assertion of unlimited belligerent rights over neutral commerce within the whole European area, and an almost unqualified denial of the sovereign rights of the nations now at peace." The novel feature of the blockade "is that it embraces many neutral ports and coasts, bars access to them, and subjects all neutral ships to approach them" to the same penalties as vessels bound for enemy ports. Such limitations on ships of a neutral nation were a distinct invasion of its sovereign rights.

In the meanwhile the enforcement of the blockade order brought serious loss to American shippers. During the month of March 73 vessels carrying American cargoes, almost all of which were bound for neutral ports, were diverted to the port of Kirkwall alone. Goods were seized on mere suspicion that they were destined for the enemy. Detained vessels, moreover, were compelled to pay storage, harbor and other charges in advance of judicial determination of the validity of the seizures. To preserve the rights of American citizens in proceedings in the British prize courts, the United States government served on Great Britain a formal caveat against the substitution of her own enactments for international law. "The Government of the United States," it said, "will insist upon their rights under the principles and rules of international law, as hitherto established, governing neutral trade in time of war, without limitation or impairment by orders-in-council or other municipal legislation by the British Government, and will not recognize the validity of prize-court proceedings taken under restraint imposed by British municipal law in derogation of the rights of American citizens under international law."

Despite this warning the United States government permitted the blockade to continue and even refused for months to renew its protests. Damage to American shipping continued to be extensive, and pro-German interests in America brought pressure on the administration to take action. The government, however, felt disinclined to hold Great Britain to strict accountability while it was suffering so grievously from wrongs at the hands of Great Britain's arch enemy — Germany. It held that the defense of trade rights was of less importance than the protection of American lives from the deadly activities of the German submarines.

Submarine Warfare.— The German war zone decree went into effect on 18 Feb. 1915, and a campaign of submarine frightfulness ensued without delay. It so happened, however, that the first serious clash between the United States and Germany came not as the result of a U-boat sinking, but of the attack upon an American vessel, the *Frye*, by an auxiliary cruiser, the *Prince Eitel Friedrich*. Despite its unlawful act this vessel entered Newport News 10 March, for protection against British warships. The United States promptly presented a claim for damages amounting to $228,059.44. Herr von Jagow, the German Foreign Secretary, maintained that the sinking of the *Frye* was quite in accordance with the principles of international law, since it was not possible to take the prize into a German port, but because of the Prussian-American treaty of 1799, the owners of the ship and the cargo would be compensated even if the court decided that the cargo was contraband.

On 1 May 1915, the following notice appeared in a number of American newspapers:

"NOTICE!

"Travelers intending to embark on the Atlantic voyage are reminded that a state of war exists between Germany and her allies and Great Britain and her allies; that the zone of war includes the waters adjacent to the British Isles; that, in accordance with formal notice given by the Imperial German Government, vessels flying the flag of Great Britain, or of any of her allies, are liable to destruction in those waters and that travelers sailing in the war zone on ships of Great Britain or her allies do so at their own risk.

"IMPERIAL GERMAN EMBASSY.

"Washington, D. C., April 22, 1915."

This notice was published in accordance with wireless orders from the Berlin Foreign Office as a warning to persons booked for passage on the Cunard liner *Lusitania* which sailed from New York the same day. It was inserted in the newspapers under the notice of the sailing of the *Lusitania*, and shows that that great vessel had been deliberately singled out for destruction.

A week later (7 May 1915) the Cunarder was attacked without warning by a German submarine off the Irish coast, and went down with no less than 1,153 persons. Of the 188 Americans on board, 114 perished. A cry of

horror went up from all parts of the United States. American citizens had been sent to their death by the deliberate action of the German government. From all sides pressure was brought upon President Wilson to demand prompt reparation for the outrage. Had he so wished, he might have brought the country into the war at once upon the tide of popular indignation caused by this event. The feeling of resentment was increased by the undisguised elation of the German people at the sinking. The news was received in the consulate at Philadelphia with cheers. Throughout the German Empire it was celebrated as though it had been a great victory. Cities were decorated, school children were given a holiday, and a medal was struck to commemorate the event. Dr. Dernburg, the kaiser's spokesman in America, immediately tried to allay indignation in America by a published defense of the sinking. "We have done and will do the best we can to avoid such trouble," he said; "but we cannot allow Americans to be used as shields to get articles of war into the hands of the Allies. The death of the Americans might have been avoided if our warning had been heeded. We put in advertisements and were careful to put them in next the advertisements of the Cunard line's sailing dates."

A few days later the German Foreign Office sent a note which was delivered to Secretary Bryan. "The German Government," it said, "desires to express its deepest sympathy at the loss of lives on board the *Lusitania*. The responsibility rests, however, with the British Government, which, through its plan of starving the civilian population of Germany, has forced Germany to resort to retaliating measures. In spite of the German offer to stop the submarine war in case the starvation plan was given up, British merchant vessels are being generally armed with guns, and have repeatedly tried to ram submarines, so that a previous search was impossible."

On 11 May, President Wilson delivered an address in Philadelphia before an audience of 4,000 people. That the occasion would be utilized by the President to give an intimation of the policy to be followed by the government was anticipated by everyone. Although not mentioning the *Lusitania* by name, he made one statement which all the world accepted as an indirect reference to the sinking. "The example of America," he said, "must be a special example. The example of America must be an example not of peace because it will not fight, but of peace because peace is the healing and elevating influence of the world and strife is not. There is such a thing as a man's being too proud to fight. There is such a thing as a nation's being so right that it does not need to convince others by force that it is right."

The President afterward explained that these words did not foreshadow the policy of the administration toward Germany. He was defining only a personal attitude. However, many both in the United States and Germany still believed that under no circumstances would the government permit the submarine sinkings to lead to war.

On 13 May 1915, the first *Lusitania* note was made public. The recent violation of American rights on the high seas, it said, formed a series of events which the government of the United States had observed with growing concern, distress and amazement. It was loath to believe that these acts, so contrary to the rules and practices of modern warfare, could be sanctioned by the German government. The United States could not accept the creation of a war zone, or admit "the adoption of such measures or such a warning of danger to operate as in any degree an abbreviation of the rights of American shipmasters or of American citizens bound on lawful errands as passengers on merchant ships of belligerent nationality; and that it must hold the Imperial German Government to a strict accountability for any infringement of those rights, intentional or accidental."

Secretary Bryan, on 31 May, made public the reply of von Jagow. The United States was wrong in assuming that the *Lusitania* was an unarmed merchantman, he said. In reality it was one of the largest and swiftest of the British auxiliary cruisers, carrying cannon concealed below decks, and contraband "including no less than 5,400 cases of ammunition intended for the destruction of the brave German soldiers." Germany had a right to destroy this ammunition intended for the enemy. For the loss of American lives the British company was responsible by attempting to use neutral citizens as protection for explosives. Had it not been for the firing of these explosives the vessel would not have sunk so quickly and many lives would have been saved.

This answer did not satisfy the American people. With the exception of the German-American papers, the press was almost unanimous in its criticism. It was agreed that the note was evasive, unconvincing and in no way met the demands of the American government.

While a second *Lusitania* note was in preparation Secretary of State Bryan resigned from the Cabinet, at the same time giving to the press a statement of differences of opinion with the President which had led to this action. There were two chief points upon which agreement had been impossible. Mr. Bryan warmly advocated the submission to an international commission of the disputes with Germany, and he was in favor of "warning Americans against travelling on belligerent vessels or with cargoes of ammunition." "Why should an American citizen be permitted to involve his country in war," he said, "by travelling upon a belligerent ship when he knows that the ship will pass through a danger zone?"

The resignation of Mr. Bryan had little effect upon public opinion in the United States, but it created the impression in Germany that American councils were divided and that a large faction in the country were opposed to war under any circumstances.

The second *Lusitania* note was made public 11 June. The German government, in explaining the sinking of the *Falaba*, had contended that an attempt on the part of a merchant vessel to escape attack and secure help released the commander of the attacking submarine from all obligation to respect the lives and safety of those on board, even after the attempt had been relinquished. This contention the United States government vigorously combatted. "Nothing but actual forcible resistance," it said, "or continued efforts to escape by flight when

ordered to stop for the purpose of visit on the part of the merchantman has ever been held to forfeit the lives of passengers and crew."

In regard to the *Lusitania,* the German note had stated that the United States government must have been unaware of the fact that the vessel had carried masked guns, trained gunners and ammunition. "Were these statements true," the note replied, "the Government of the United States would have been bound to take official cognizance in performing its recognized duty as a neutral power and in enforcing its national laws. It was its duty to see to it that the *Lusitania* was not armed for offensive action, that she was not serving as a transport, that she did not carry a cargo prohibited by the statutes of the United States, and that if, in fact, she was a naval auxiliary of Great Britain, she should not receive her clearance as a merchantman, and it performed that duty and enforced its statutes with scrupulous vigilance through its regularly constituted officials" The government of the United States was able, therefore, "to assure the Imperial German Government that it has been misinformed. . .

"Whatever be the other facts regarding the *Lusitania,* the principal fact is that a great steamer, primarily and chiefly a conveyance for passengers, and carrying more than a thousand souls who had no part or lot in the conduct of the war, was torpedoed and sunk without so much as a challenge or warning and that men, women and children were sent to their deaths in circumstances unparalleled in modern warfare. . . .

"The Government of the United States is contending for something much greater than mere rights of property or privileges of commerce. It is contending for nothing less high and sacred than the rights of humanity which every government honors itself in respecting and which no government is justified in resigning on behalf of those under its care and authority. . . .

"The Government of the United States, therefore, deems it reasonable to expect that the Imperial German Government will adopt the measures necessary to put these principles into practice in respect to the safeguarding of American lives and American ships, and asks for assurances that this will be done."

The German note in reply, which was published in America 8 July 1915, was neither conciliatory nor convincing. It once more tried to place the blame for submarine frightfulness upon Great Britain. The case of the *Lusitania,* it said, showed with horrible clearness to what jeopardizing of human lives the misdeeds of the Allies were leading. All distinction between merchant vessels and war ships had been done away with by the arming of British merchantmen and by the ramming of submarines.

"If the commander of the German submarine which destroyed the *Lusitania,*" the note continued, "had caused the crew and passengers to take to the boats before firing a torpedo this would have meant the sure destruction of his own vessel. After the experiences in sinking much smaller and less seaworthy vessels, it was to be expected that a mighty ship like the *Lusitania* would remain above water long enough even after the torpedoing to permit passengers to enter the ship's boats. Circumstances of a very peculiar kind, especially the presence on board of large quantities of highly explosive materials, defeated this expectation. In addition, it may be pointed out that if the *Lusitania* had been spared thousands of cases of munitions would have been sent to Germany's enemies and thereby thousands of German mothers and children robbed of bread winners."

In America the note was bitterly condemned. "The fact that the Germans have thrice responded to the demands of the United States with evasive notes," said one journal, "that they have with such scant courtesy as to border upon insult neglected the demands of the United States for reparation for the *Lusitania* incident, and have offered nothing as to the future protection for American interests which the United States can consider with dignity or safety, has not failed to impress itself upon the American mind."

President Wilson replied in a note of 21 July 1915. He declared the German note "unsatisfactory because it fails to meet the real differences between the two governments, and indicates no way in which the accepted principles of law and humanity may be applied in the grave matter in controversy, but proposes, on the contrary, arrangements for a partial suspension of those principles which virtually set them aside. . . .

"Illegal and inhuman acts, however justifiable they may be thought to be against an enemy who is believed to have acted in contravention of law and humanity, are manifestly indefensible when they deprive neutrals of their acknowledged rights, particularly when they violate the right of life itself."

The note closed with a warning. "Friendship itself prompts" this government "to say to the Imperial German Government that repetitions by the commanders of German naval vessels of acts in contravention of those rights must be regarded by the Government of the United States, when they affect American citizens, as deliberately unfriendly."

While the relations between the two nations were thus strained, news reached America that the British liner *Arabic,* while on her way from England to New York, had been torpedoed off the coast of Ireland, and had gone down with a loss of 44 persons, two of whom were American citizens. Since the vessel had not been warned, since it carried no ammunition, the sinking seemed clearly to come within the President's definition of an act "deliberately unfriendly to the United States." Many people expected that diplomatic relations would be broken off without further delay.

After a careful investigation of the incident Ambassador Page made a report to the government at Washington. From the evidence at hand it appeared that the *Arabic* had made no attempt to escape, had offered no resistance, had not tried to ram the submarine, and that the torpedo had been discharged without warning.

The seriousness of the issue seems at last to have alarmed the German government and a decision was reached to modify the submarine campaign to conform if possible to the President's wishes. On 1 September Ambassador von Bernstorff sent Secretary of State Lansing a note foreshadowing Germany's action. "With reference to our conversation this morning," he said, "I beg to inform you that my instructions concerning our answer to your last *Lusi-*

tania note contains the following passage: 'Liners will not be sunk by our submarines without warning and without safety to the lives of noncombatants, provided that the liners do not try to escape or offer resistance.' Although I know that you do not wish to discuss the *Lusitania* question until the *Arabic* incident has been definitely and satisfactorily settled, I desire to inform you of the above because this policy of my Government was decided on before the *Arabic* incident occurred."

Despite this assurance, the German government, after an inquiry of its own into the sinking of the *Arabic*, refused to admit any obligation or grant any indemnity in the matter. The report of the commander of the submarine showed that the *Arabic* had apparently attempted to ram his vessel and that he had discharged the torpedo without warning to escape being himself sunk. But, continued the note, "the German Government is unable, however, to acknowledge any obligation to grant indemnity in the matter, even if the commander should have been mistaken as to the aggressive intentions of the *Arabic*."

From this position, however, the Imperial government soon retreated, and on 5 Oct. 1915, Count von Bernstorff informed Secretary Lansing that such stringent orders had been issued to submarine commanders as to make a recurrence of cases similar to that of the *Arabic* out of the question. In regard to the *Arabic* sinking itself, Germany regretted and disavowed the act, had so notified Captain Schneider, the commander of the submarine, and would pay indemnity for the loss of American lives. On 7 Nov. 1915, the situation was complicated by the sinking of the *Ancona*, an Italian liner, by an Austrian submarine. The *Ancona* attempted to escape, but when fired upon and hit, stopped its engines. The vessel sank quickly and over 200 persons were lost, among them being nine Americans. Secretary Lansing made a demand for reparation and disavowal. Information at hand showed, he said, that after the vessel had stopped and before all the crew and passengers could take to the boats, she had been torpedoed and shelled, and that by drowning and gunfire American citizens had lost their lives. The conduct of the submarine commander could only be "characterized a wanton slaughter of defenseless noncombatants." The United States therefore demanded that the officer be punished and that reparation be made for the American citizens killed or injured.

The Austro-Hungarian government replied 15 Dec. 1915. The note was evasive, and in tone calmly insolent. The United States government had blamed the submarine commander sharply, it said, but had failed to specify upon what evidence it based its conclusions. Austria-Hungary was in no way concerned with the attitude of the United States government in regard to submarine warfare as expressed in its notes to Germany, and could not be expected to shape its policies in conformity thereto. No reference whatever was made to the demand for reparation, disavowal and punishment for the submarine commander.

Secretary Lansing, on 19 Dec. 1915, answered this note. Baron Zwiedinek, he said the Austrian *Chargé d'Affaires*, had transmitted a report of the Austro-Hungarian Admiralty itself on the sinking. In this report it was admitted that the vessel had been torpedoed after it had come to a stop and while passengers were still on board. This admission was enough to fix on the commander of the submarine the responsibility for having violated willfully the laws of nations. "The Government of the United States therefore finds no other course open to it, but to hold the Imperial and Royal Government responsible for the act of its naval commander and to renew the definite but respectful demands made in its communication of the sixth of December."

The Austro-Hungarian government, probably inspired from Berlin, now surrendered, and in a note of 29 December, agreed that hostile private ships, in so far as they did not flee or offer resistance, "may not be destroyed until the persons on board have been placed in safety," and announced that the officer who had sunk the *Ancona* had been punished, and promised indemnity.

On 24 March 1916, the *Sussex*, a French passenger steamer, was torpedoed without warning in the Channel, and although she kept afloat, some 90 persons were killed or wounded. The *Sussex* had never been used as a troop ship and carried no armament. An examination of the hull of the vessel by American officials established the fact that it had been a German made torpedo and not a mine that had caused the explosion.

In a note touching upon this affair the German government admitted that a strange vessel had been torpedoed in the Channel on 24 March, but contended that it was not the *Sussex* but a war vessel. The commander of the submarine had made a sketch of the ship, and the lines were those of a cruiser or mine-layer, not of a passenger ship.

On 19 April 1916, President Wilson's reply to the German note was printed in the newspapers. It was pointed out that all the circumstances of the case mentioned in the German note corresponded exactly to the case in point, except the difference between the sketch and the lines of the *Sussex*, which was undoubtedly due to the inaccuracy of the drawing. "The Government of the United States," the President continued, "is forced by recent events to conclude that it is only one instance, even though one of the most extreme and most distressing instances, of the deliberate method and spirit of indiscriminate destruction of merchant vessels of all sorts, nationalities, and destinations. . . . . The Government of the United States has been very patient. . . . " But the time had now come for definite promises. Unless Germany "should now immediately declare and effect an abandonment of its present methods of submarine warfare against passenger and freight-carrying vessels, the Government of the United States can have no choice but to sever diplomatic relations with the German Empire altogether."

The German reply was handed to Ambassador Gerard on 4 May. It contained a definite promise in regard to the future conduct of the U-boat campaign. "The German Government. . . . notifies the Government of the United States that the German naval forces have received the following orders: 'In accordance with the general principles of visit and search and destruction of merchant vessels recognized by international law, such vessels,

both within and without the area declared as a naval war zone, shall not be sunk without warning and without saving human lives, unless these ships attempt to escape or offer resistance.'

"The German Government is confident that, in consequence of the new orders issued to its naval forces, the Government of the United States will now also consider all impediments removed which may have been in the way of a mutual co-operation towards the restoration of the freedom of the seas during the war as suggested in the note of 23 July 1915, and it does not doubt that the Government of the United States will now demand and insist that the British Government shall forthwith observe the rules of international law universally recognized before the war as they are laid down in the notes presented by the Government of the United States to the British Government on 24 Dec. 1914, and 5 Nov. 1915. Should the steps taken by the Government of the United States not attain the object it desires to have the laws of humanity followed by all belligerent nations, the German Government would then be facing a new situation, in which it must reserve itself complete liberty of action."

On 8 May, Secretary Lansing replied, accepting Germany's abandonment of the policy which had so menaced the good relations between the two countries, but expressly rejecting the attached condition. "The Government of the United States feels it necessary to state that it takes for granted," he said, "that the Imperial German Government does not intend to imply that the maintenance of its newly announced policy is in any way contingent upon the course or result of diplomatic negotiations between the Government of the United States and any other belligerent Government, notwithstanding the fact that certain passages in the Imperial Government's note of the fourth instant appear to be susceptible of that construction.

"In order, however, to avoid any possible misunderstanding, the Government of the United States notifies the Imperial Government that it cannot for a moment entertain, much less discuss, a suggestion that respect by German naval authorities for the rights of citizens of the United States upon the high seas should in any way or in the slightest degree be made contingent upon the conduct of any other Government affecting the rights of neutrals and noncombatants."

Thus in victory for the United States ended, for the time being the long diplomatic quarrel over unrestrained submarine warfare. President Wilson had forced Germany to acknowledge the principle of visit and search, had wrung from her a promise not to sink merchant vessels without warning, unless those vessels attempted to escape. It was a great triumph for the principles of humanity and for moderation in warfare. It now remained to be seen how far Germany would adhere to her promises.

Peace Notes and America's Entry into the War.— On 9 Dec. 1915 Chancellor von Bethmann-Hollweg announced that Germany was ready for peace. This was accepted by the belligerent powers as an invitation to a general discussion of peace terms, and in fact it was followed by a series of speeches and debates by the statesmen on both sides, but so profound was the distrust that in the end the discussion came to nothing. Exactly a year after his first suggestion the chancellor again announced to the Reichstag that the Central Powers were ready to enter into peace negotiations. The emperor, he said, in a deep moral and religious sense of duty toward his nation and, beyond it, toward humanity, considered that the moment had come for official action toward peace. The official German note, which followed on 12 December, spoke of the war as having been forced on the Central Powers, boasted of their success in recent military operations and the impregnable situation they then occupied. Yet they made the proposal to enter forthwith into peace negotiations. Their aims they declared were not to shatter or to annihilate their adversaries.

This proposal was received with coldness in all the Allied countries. It was generally regarded as an attempt to reap the benefit of successes that had reached their climax and to come to terms before the tide of war turned. Premier Briand spoke of the proposal as a "crude trap." In every Allied country speeches by responsible men revealed the conviction that no good could come from overtures that made no guarantee against a repetition of aggression, that contained no hint of reparation. Lloyd George stated that Great Britain would continue the struggle until she could secure "complete restitution, full reparation, effectual guarantees."

It was in the midst of this unpromising situation that President Wilson, on 18 December, presented his peace proposal. Identical notes were telegraphed to each of the belligerent capitals suggesting that "an early occasion be sought to call out from all the nations now at war such an avowal of their respective views as to the terms upon which the war might be concluded and the arrangements which would be deemed satisfactory as a guaranty against its renewal or the kindling of any similar conflict in the future, as would make it possible frankly to compare them." The President pointed out that the "objects which the statesmen of the belligerents on both sides have in mind in this war are virtually the same, as stated in general terms to their own people and to the world," and that "in the measures to be taken to secure the future peace of the world the people and Government of the United States are as vitally and as directly interested as the Governments now at war."

It was stated that the President "has long had it in mind to offer" the suggestion for peace, which was in no way associated with the recent overtures of the Central Powers.

Three days later Secretary Lansing, in explaining the reasons for sending the note, said: "It is not our material interest we had in mind when the note was sent, but more and more our own rights are becoming involved by the belligerents on both sides, so that the situation is becoming increasingly critical.

"I mean that we are drawing nearer the verge of war ourselves and, therefore, we are entitled to know exactly what each belligerent seeks in order that we may regulate our conduct in the future."

The Central Powers replied in practically identical notes on 26 December. They failed to state their peace terms, but proposed "an immediate meeting of the delegates of the belligerent

States at a neutral place." Before answering President Wilson's proposals, the Allies, 30 Dec. 1916, presented a joint reply to the German offer of the 12th. The German note, it said, contained only a "sham offer," an attempt "to justify in advance a new series of crimes," it was "empty and insincere," a mere "war manœuvre." "Once again the Allies declare that no peace is possible so long as they have not secured reparation of violated rights and liberties, recognition of the principle of nationalities, and of the free existence of small states, so long as they have not brought about a settlement calculated to end, once and for all, causes of long-standing menace to the nations, and to afford the only effective guarantees for the future security of the world."

The Central Powers defended their case in notes addressed to the neutrals, issued by Germany and Austria-Hungary 11 Jan. 1917. The motives of the Central Powers in issuing their proposal of peace were set forth, and the moral pretensions of the Allies ridiculed. "The sincerity which our enemies deny to the proposal of the four allied powers cannot be allowed by the world to these demands if it recalls the fate of the Irish people, the destruction of the freedom and independence of the Boer Republics, the subjection of Northern Africa by England, France and Italy, the suppression of foreign nationalities in Russia, and, finally, the oppression of Greece, which is unexampled in history." The schemes of the Allies, "according to the statements of their responsible statesmen, are directed, among other things, toward the conquest of Alsace-Lorraine and several Prussian provinces, the humiliation and diminution of Austria-Hungary, the disintegration of Turkey, and the dismemberment of Bulgaria. In view of such war-aims, the demand for reparation, restitution and guarantees in the mouth of our enemies sounds strange."

On 10 Jan. 1917, the Allies gave a joint reply to the note of President Wilson, supplemented by a separate note from Belgium. Their war-aims had been formulated on many occasions by the chiefs of their divers governments. "The civilized world knows that they imply, in all necessity and in the first instance" the restoration of Belgium, Serbia and Montenegro with indemnities; the evacuation of the invaded territories of France, Russia and Rumania, with just reparation; restitution of provinces or territories wrested in the past from the Allies by force or against the will of their populations; liberation from foreign domination of Italians, Slavs, Rumanians and Czecho-Slovaks; enfranchisement of populations subject to the bloody tyranny of the Turks and the expulsion from Europe of the Ottoman Empire; the creation of a free Poland from Russian, German and Austro-Hungarian territory; a reorganization of Europe founded upon respect of nationalities, and full security and liberty of economic development for all nations; international agreements to guarantee territorial and maritime frontiers against unjustified attacks."

On 22 Jan. 1917, President Wilson unexpectedly appeared before the Senate and delivered an address which caused a profound sensation in Europe. First of all, he said, there must be peace without victory. Victory would mean peace forced upon the loser, a victor's terms forced upon the vanquished. American co-operation in guaranteeing peace must depend on the nature of the settlement itself. Since both sides had stated that it was not their intention to crush their antagonists, it must be a peace between equals. It must be a peace founded upon an equality of rights among the nations, irrespective of their size or strength; it must be a peace based upon the principle that governments derive all their just powers from the consent of the governed. The acceptance of this principle, he said, would imply the inviolable security of life, of worship, and of industrial and social development to all the peoples who have hitherto lived under governments not responding to their wishes. Every great people should be assured of direct access to the sea. Freedom of the seas should be assured. There must be limitations of armaments, military and naval.

The mass of discussion which this address called forth in Europe and America was interrupted by a note from Germany on 31 Jan. 1917, announcing the immediate resumption of ruthless submarine warfare. This note took cognizance of the President's address, and Germany declared herself ready to accept self-government and equality of rights for all nations, the freedom of the seas, the open door, and the repudiation of compelling alliances. But since the attempts of the Central Powers to bring peace had not succeeded, it was now necessary to fight to the bitter end. Thus forced to fight for existence the Imperial government could not neglect the full employment of all the weapons which were at its disposal.

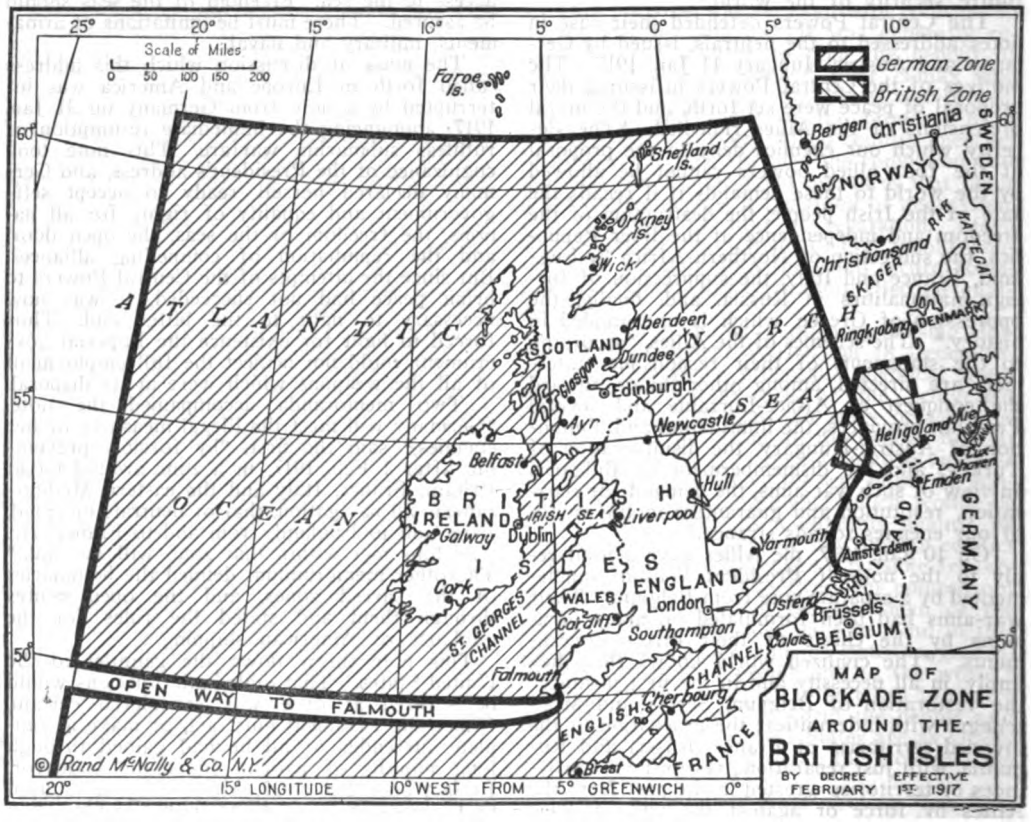
Two memoranda accompanied the note. "Germany will meet the illegal measures of her enemies," said the first, "by forcibly preventing after 1 Feb. 1917, in a zone around Great Britain, France, Italy and the eastern Mediterranean, all navigation, that of neutrals included, from and to England, from and to France, etc. All ships met within that zone will be sunk." The other memorandum defined the boundaries of the barred zones, and the open routes through them and stated the rules for the guidance of American shipping.

This note threw down the gauntlet to the United States. That diplomatic relations would be severed at once was considered certain. Either the President must act, or make a complete surrender of all he had gained through long months of patient diplomatic endeavor. In fact on 3 Feb. 1917, Mr. Wilson announced to Congress that relations with Germany had been severed. "I think you will agree with me," he said "that, in view of this declaration, which suddenly and without prior intimation of any kind, deliberately withdraws the solemn assurance given in the Imperial government's note of the 4th of May 1916, this government has no alternative consistent with the dignity and honor of the United States but to take the course which, in its note of the 18th of April 1916, it announced that it would take in the event that the German government did not declare and effect an abandonment of the methods of submarine warfare which it was then employing and to which it now purposes to again resort. I have, therefore, directed the Secretary of State to announce to his Excellency the German Ambassador that all diplomatic relations between the United States and the German Empire are severed, and that the

American Ambassador at Berlin will immediately be withdrawn; and, in accordance with this decision, to hand to his Excellency his passports."

The President still trusted that the German authorities would not go so far as to destroy American ships and take American lives on the high seas. Should this, however, happen, he would take the liberty of coming again before Congress to ask that authority be given him to use any means necessary for the protection of American seamen and other citizens.

Germany, meanwhile, had actually begun the sinking of merchant vessels without warning. But the damage done to American shipping was



more in apprehension than in fact, as the fear of sinking had kept hundreds of vessels in harbor. President Wilson, therefore, appeared again before Congress and requested that the authority be given him to supply merchant ships with defensive arms. This request met with vigorous opposition from a small group of senators, and by an active filibuster, was held up for some days. In the end it was passed by an amendment of the Senate's rules which provided that by a two-thirds vote a measure might be brought to an immediate vote.

In the meanwhile the country was further aroused against Germany by the publication by the Associated Press of a plan to embroil the United States in war with Mexico and Japan. On 19 Jan. 1917, the German Minister to Mexico had been instructed by Foreign Minister Zimmerman to propose an alliance with Mexico against the United States.

"On the first of February," the instructions said, "we intend to begin submarine warfare unrestricted. In spite of this, it is our intention to endeavor to keep neutral with the United States of America. If this attempt is not successful, we propose an alliance on the following basis with Mexico: That we shall make war together and together make peace. We shall give general financial support and it is understood that Mexico is to reconquer the lost territory of New Mexico, Texas and Arizona. The details are left for settlement.

"You are instructed to inform the President of Mexico of the above in the greatest confidence as soon as it is certain that there will be an outbreak of war with the United States, and suggest that the President of Mexico, on his own initiative, should communicate with Japan, suggesting adherence at once to the plan, and at the same time to offer to mediate between Germany and Japan. Please call to the attention of the President of Mexico that the employment of ruthless submarine warfare now promises to compel England to make peace in a few months."

During the month of March news reached the United States that three American merchant ships, the *City of Memphis*, the *Illinois* and the *Vigilancia*, had been sunk by German submarines. This news influenced President Wilson to call Congress into extraordinary session on 2 April 1917.

The President's address to the Congress follows:

"I have called the Congress into extraordinary session because there are serious, very serious, choices of policy to be made, and made immediately, which it was neither right nor constitutionally permissible that I should assume the responsibility of making.

"On the 3d of February last I officially laid before you the extraordinary announcement of the Imperial German Government that on and after the first day of February it was its purpose to put aside all restraints of law or of humanity and use its submarines to sink every vessel that sought to approach either the ports of Great Britain and Ireland or the western coasts of Europe or any of the ports controlled by the enemies of Germany within the Mediterranean. That had seemed to be the object of the German warfare earlier in the war, but since April of last year the Imperial Government had somewhat restrained the commanders of its under-sea craft, in conformity with its promise, then given to us, that passenger boats should not be sunk and that due warning would be given to all other vessels which its submarines might seek to destroy, when no resistance was offered or escape attempted, and care taken that their crews were given at least a fair chance to save their lives in their open boats. The precautions taken were meagre and haphazard enough, as was proved in distressing instance after instance in the progress of the cruel and unmanly business, but a certain degree of restraint was observed.

"The new policy has swept every restriction aside. Vessels of every kind, whatever their flag, their character, their cargo, their destination, their errand, have been ruthlessly sent to the bottom without warning and without thought of help or mercy for those on board, the vessels of friendly neutrals along with those of belligerents. Even hospital ships carrying relief to the sorely bereaved and stricken people of Belgium, though the latter were provided with safe conduct through the proscribed areas by the German government itself and were distinguished by unmistakable marks of identity, have been sunk with the same reckless lack of compassion or of principle.

"I was for a little while unable to believe that such things would in fact be done by any government that had hitherto subscribed to humane practices of civilized nations. International law had its origin in the attempt to set up some law which would be respected and observed upon the seas, where no nation has right of dominion and where lay the free highways of the world. By painful stage after stage has that law been built up, with meagre enough results indeed, after all was accomplished that could be accomplished, but always with a clear view, at least, of what the heart and conscience of mankind demanded.

"This minimum of right the German government has swept aside, under the plea of retaliation and necessity and because it had no weapons which it could use at sea except these, which it is impossible to employ, as it is employing them, without throwing to the wind all scruples of humanity or of respect for the understanding that was supposed to underlie the intercourse of the world.

"I am not now thinking of the loss of property involved, immense and serious as that is, but only of the wanton and wholesale destruction of the lives of non-combatants, men, women, and children, engaged in pursuits which have always, even in the darkest periods of modern history, been deemed innocent and legitimate. Property can be paid for; the lives of peaceful and innocent people cannot be. The present German submarine warfare against commerce is a warfare against mankind.

"*It is a war against all nations. American ships have been sunk, American lives taken, in ways which it has stirred us very deeply to learn of, but the ships and people of other neutral and friendly nations have been sunk and overwhelmed in the waters in the same way. There has been no discrimination.*

"*The challenge is to all mankind. Each nation must decide for itself how it will meet it.* The choice we make for ourselves must be made with a moderation of counsel and a temperateness of judgment befitting our character and our motives as a nation. We must put excited feelings away. Our motive will not be revenge or the victorious assertion of the physical might of the nation, but only the vindication of right, of human right, of which we are only a single champion.

"When I addressed the Congress on the 26th of February last I thought that it would suffice to assert our neutral rights with arms, our right to use the seas against unlawful interference, our right to keep our people safe against unlawful violence. But armed neutrality, it now appears, is impracticable. Because submarines are in effect outlaws, when used as the German submarines have been used against merchant shipping, it is impossible to defend ships against their attacks as the law of nations has assumed that merchant-men would defend themselves against privateers or cruisers, visible craft giving chase upon the open sea. It is common prudence in such circumstances, grim necessity indeed, to endeavor to destroy them before they have shown their own intention. They must be dealt with upon sight, if dealt with at all.

"The German government denies the right of neutrals to use arms at all within the areas of the sea which it has proscribed, even in the defence of rights which no modern publicist has ever before questioned their right to defend. The intimation is conveyed that the armed guards which we have placed on our merchant ships will be treated as beyond the pale of law and subject to be dealt with as pirates would be. Armed neutrality is ineffectual enough at best; in such circumstances and in the face of such pretensions it is more than ineffectual; it is likely only to produce what it was meant to prevent; it is practically certain to draw us into the war without either the rights or the effectiveness of belligerents. There is one choice we cannot make, we are incapable of making; we will not choose the path of submission and suffer the most sacred rights of our nation and our people to be ignored or violated. The wrongs against which we now array ourselves are no common wrongs; they cut to the very roots of human life.

"With a profound sense of the solemn and even tragical character of the step I am taking and of the grave responsibilities which it involves, but in unhesitating obedience to what I deem my constitutional duty, *I advise that the Congress declare the recent course of the Imperial German Government to be in fact nothing less than war against the Government and people of the United States; that it formally accept the status of belligerent which has thus been thrust upon it; and that it take immediate steps not only to put the country in a more thorough state of defence but also to exert all its power and employ all its resources to bring the government of the German Empire to terms and end the war.*

"What this will involve is clear. It will involve the utmost practicable co-operation in counsel and action with the governments now at war with Germany, and, as incident to that, the extension to those governments of the most liberal financial credits, in order that our resources may so far as possible be added to theirs.

"It will involve the organization and mobilization of all the material resources of the country to supply the materials of war and serve the incidental needs of the nation in the most abundant and yet the most economical and efficient way possible.

"It will involve the immediate full equipment of the navy in all respects, but particularly in supplying it with the best means of dealing with the enemy's submarines.

"It will involve the immediate addition to the armed forces of the United States, already provided for by law in case of war, of at least 500,000 men, who should, in my opinion, be chosen upon the principle of universal liability to service, and also the authorization of subsequent additional increments of equal force so soon as they may be needed and can be handled in training.

"It will involve also, of course, the granting of adequate credits to the government, sustained, I hope, so far as they can equitably be sustained by the present generation, by well conceived taxation.

"I say sustained so far as may be equitable by taxation, because it seems to me that it would be most unwise to base the credits, which will now be necessary, entirely on money borrowed. It is our duty, I most respectfully urge, to protect our people, so far as we may, against the very serious hardships and evils which would be likely to arise out of the inflation which would be produced by vast loans.

"In carrying out the measures by which these things are to be accomplished we should keep constantly in mind the wisdom of interfering as little as possible in our own preparation and in the equipment of our own military forces with the duty — for it will be a practical duty — of supplying the nations already at war with Germany with the materials which they can obtain only from us or by our assistance. They are in the field and we should help them in every way to be effective there.

"I shall take the liberty of suggesting through the several executive departments of the government, for the consideration of your committees, measures for the accomplishment of the several objects I have mentioned. I hope that it will be your pleasure to deal with them as having been framed after very careful thought by the branch of the government upon whom the responsibility of conducting the war and safeguarding the nation will most directly fall.

"While we do these things, these deeply momentous things, let us be very clear, and make very clear to all the world, what our motives and our objects are. My own thought has not been driven from its habitual and normal course by the unhappy events of the last two months, and I do not believe that the thought of the nation has been altered or clouded by them. I have exactly the same thing in mind now that I had in mind when I addressed the Senate on the 22d of January last; the same that I had in mind when I addressed the Congress on the 3d of February and on the 26th of February. Our object now, as then, is to vindicate the principles of peace and justice in the life of the world as against selfish and autocratic power, and to set up among the really free and self-governed peoples of the world such a concert of purpose and of action as will henceforth insure the observance of those principles.

"Neutrality is no longer feasible or desirable where the peace of the world is involved and the freedom of its peoples, and the menace to that peace and freedom lies in the existence of autocratic governments, backed by organized force which is controlled wholly by their will, not by the will of their

people. We have seen the last of neutrality in such circumstances. We are at the beginning of an age in which it will be insisted that the same standards of conduct and of responsibility for wrong done shall be observed among nations and their governments that are observed among the individual citizens of civilized states.

"We have no quarrel with the German people. We have no feeling toward them but one of sympathy and friendship. It was not upon their impulse that their government acted in entering this war. It was not with their previous knowledge or approval. It was a war determined upon as wars used to be determined upon in the old, unhappy days, when peoples were nowhere consulted by their rulers and wars were provoked and waged in the interest of dynasties or of little groups of ambitious men who were accustomed to use their fellow men as pawns and tools.

"Self-governed nations do not fill their neighbors' states with spies or set the course of intrigue to bring about some critical posture of affairs which will give them an opportunity to strike and make conquest. Such designs can be successfully worked out only under cover and where no one has the right to ask questions. Cunningly contrived plans of deception or aggression, carried, it may be, from generation to generation, can be worked out and kept from the light only within the privacy of courts or behind the carefully guarded confidences of a narrow and privileged class. They are happily impossible where public opinion commands and insists upon full information concerning all the nation's affairs.

"A steadfast concert for peace can never be maintained except by a partnership of democratic nations. No autocratic government could be trusted to keep faith within it or observe its covenants. It must be a league of honor, a partnership of opinion. Intrigue would eat its vitals away; the plottings of inner circles who could plan what they would and render account to no one would be a corruption seated at its very heart. Only free peoples can hold their purpose and their honor steady to a common end and prefer the interests of mankind to any narrow interest of their own.

"Does not every American feel that assurance has been added to our hope for the future peace of the world by the wonderful and heartening things that have been happening within the last few weeks in Russia? Russia was known by those who knew her best to have been always in fact democratic at heart in all the vital habits of her thought, in all the intimate relationships of her people that spoke their natural instinct, their habitual attitude toward life. The autocracy that crowned the summit of her political structure, long as it had stood and terrible as was the reality of its power, was not in fact Russian in origin, character, or purpose; and now it has been shaken off and the great, generous Russian people have been added, in all their native majesty and might, to the forces that are fighting for freedom in the world, for justice, and for peace. Here is a fit partner for a League of Honor.

"One of the things that has served to convince us that the Prussian autocracy was not and could never be our friend is that from the very outset of the present war it has filled our unsuspecting communities, and even our offices of government, with spies and set criminal intrigues everywhere afoot against our national unity of counsel, our peace within and without, our industries and our commerce. Indeed, it is now evident that its spies were here even before the war began; and it is unhappily not a matter of conjecture but a fact proved in our courts of justice, that the intrigues which have more than once come perilously near to disturbing the peace and dislocating the industries of the country, have been carried on at the instigation, with the support, and even under the personal direction of official agents of the Imperial Government accredited to the Government of the United States.

"Even in checking these things and trying to extirpate them we have sought to put the most generous interpretation possible upon them because we knew that their source lay, not in any hostile feeling or purpose of the German people toward us (who were, no doubt, as ignorant of them as we ourselves were), but only in the selfish designs of a government that did what it pleased and told its people nothing. But they have played their part in serving to convince us at last that that government entertains no real friendship for us, and means to act against our peace and security at its convenience. That it means to stir up enemies against us at our very doors the intercepted note to the German Minister at Mexico City is eloquent evidence.

"We are accepting this challenge of hostile purpose because we know that in such a government, following such methods, we can never have a friend; and that in the presence of its organized power, always lying in wait to accomplish we know not what purpose, can be assured security for the democratic government of the world. We are now about to accept the gage of battle with this natural foe to liberty and shall, if necessary, spend the whole force of the nation to check and nullify its pretensions and its power. We are glad, now that we see the facts, no veil of false pretense about them, to fight thus for the ultimate peace of the world and for the liberation of its peoples, the German peoples included; for the rights of nations, great and small, and the privilege of men everywhere to choose their way of life and of obedience.

"*The world must be made safe for democracy.* Its peace must be planted upon the tested foundations of political liberty We have no selfish ends to serve.. We desire no conquest, no dominion. We seek no indemnities for ourselves, no material compensation for the sacrifices we shall freely make. We are but one of the champions of the rights of mankind. We shall be satisfied when those rights have been made as secure as the faith and the freedom of nations can make them.

"Just because we fight without rancor and without selfish object, seeking nothing for ourselves but what we shall wish to share with all free peoples, we shall, I feel confident, conduct our operations as belligerents without passion and ourselves observe with proud punctilio the principles of right and of fair play we profess to be fighting for.

"I have said nothing of the governments allied with the Imperial Government of Germany because they have not made war upon us or challenged us to defend our right and our honor. The Austro-Hungarian government has, indeed, avowed its unqualified indorsement and acceptance of the reckless and lawless submarine warfare, adopted now without disguise by the Imperial German Government, and it has therefore not been possible for this government to receive Count Tarnowski, the Ambassador recently accredited to this government by the Imperial and Royal Government of Austria-Hungary; but that government has not actually engaged in warfare against citizens of the United States on the seas, and I take the liberty, for the present at least, of postponing a discussion of our relations with the authorities at Vienna. We enter this war only where we are clearly forced into it because there are no other means of defending our rights.

"It will be all the easier for us to conduct ourselves as belligerents in a high spirit of right and fairness because we act without animus, not with enmity toward a people or with the desire to bring any injury or disadvantage upon them, but only in armed opposition to an irresponsible government which has thrown aside all considerations of humanity and of right and is running amuck.

"We are, let me say again, the sincere friends of the German people, and shall desire nothing so much as the early re-establishment of intimate relations of mutual advantage between us, however hard it may be for them for the time being to believe that this is spoken from our hearts. We have borne with their present government through all these bitter months because of that friendship, exercising a patience and forbearance which would otherwise have been impossible.

"We shall happily still have an opportunity to prove that friendship in our daily attitude and actions toward the millions of men and women of German birth and native sympathy who live among us and share our life, and we shall be proud to prove it toward all who are in fact loyal to their neighbors and to the government in the hour of test. They are most of them as true and loyal Americans as if they had never known any other fealty or allegiance. They will be prompt to stand with us in rebuking and restraining the few who may be of a different mind and purpose. If there should be disloyalty it will be dealt with with a firm hand of stern repression; but if it lifts its head at all, it will lift it only here and there and without countenance except from a lawless and malignant few.

"It is a distressing and oppressive duty, gentlemen of the Congress, which I have performed in thus addressing you. There are, it may be, many months of fiery trial and sacrifice ahead of us. It is a fearful thing to lead this great, peaceful people into war, into the most terrible and disastrous of all wars, civilization itself seeming to be in the balance.

"But the right is more precious than peace, and we shall fight for the things which we have always carried nearest our heart — for democracy, for the right of those who submit to authority to have a voice in their own governments, for the rights and liberties of small nations, for a universal dominion of right by such a concert of free peoples as shall bring peace and safety to all nations and make the world itself at last free.

"To such a task we can dedicate our lives and our fortunes, everything that we are and everything that we have, with the pride of those who know that the day has come when America is privileged to spend her blood and her might for the principles that gave her birth and happiness and the peace which she has treasured.

"God helping her, she can do no other."

The same evening a resolution was introduced into each House declaring that a state of war existed. After a debate of 13 hours the resolution passed the Senate. On the morning of 6 April 1917, the House also passed the resolution by the vote of 373 to 50.

The example of the United States had a profound effect on other neutral states. On 10 April, Brazil severed diplomatic relations with Germany. The same day Argentina endorsed the action of the United States. Bolivia severed relations with Germany 13 April. Paraguay and Uruguay recognized the justice of

the course of action of the United States. Cuba declared war on Germany.

The Pope's Peace Note and the Fourteen Points.— On 1 Aug. 1917, Pope Benedict XV addressed a note to the rulers of the belligerent peoples. The note spoke of the Pope's impartiality during the war, his good will to all, and of previous endeavors to bring the peoples and their rulers to more moderate resolutions. He invited the warring powers to agree on the following points: the replacement of the force of arms by the moral force of right; reciprocal disarmament; the acceptance of the principles of arbitration with penalties to be laid on any state refusing to arbitrate a national question or to accept the decision; indemnity for damage done; the waiving of the cost of the war; entire and reciprocal condonation; Belgium to be evacuated with guarantees for her political, military and economic independence; the German colonies to be returned in payment for the evacuation of the occupied regions of France; territorial questions such as those concerning Alsace-Lorraine, Trieste, Trent, to be submitted to peaceful negotiation; community of the sea to be established. "Such are the principal bases," he said, "whereon we believe the future reorganization of the peoples ought to be built."

The Pope's note called forth a number of comments from the leading statesmen of both sides. The reply of President Wilson dated 27 August was generally accepted as expressive of the sentiment in all the Allied nations. The appeal of his Holiness, said Mr. Wilson, was in effect a proposal to return to the *status ante bellum*, with certain modifications. But it was clear that no part of the program could be carried out unless there was a firm and lasting basis for it. "We cannot take the word of the present rulers of Germany as a guarantee of anything that is to endure, unless explicitly supported by such conclusive evidence of the will and purpose of the German people themselves as the other peoples of the world would be justified in accepting. Without such guarantees treaties of settlement, agreements for disarmament, covenants to set up arbitration in the place of force, territorial adjustments, reconstitutions of small nations, if made with the German Government, no man, no nation could now depend on. We must wait some new evidence of the purposes of the great peoples of the Central Powers."

As months passed and the war continued there grew up an insistent demand, in Germany as well as in the Allied countries, that the nations at war with the Central Powers should make a new statement of their purposes and aims. This demand Premier Lloyd George attempted to meet by an address delivered 5 Jan. 1918, to the delegates of the British trade unions. A more elaborate statement followed from President Wilson on 8 January, summarizing the "program of the world's peace" under 14 heads.

"1. Open covenants of peace, openly arrived at, after which there shall be no private international understandings of any kind, but diplomacy shall proceed always frankly and in the public view.

"2. Absolute freedom of navigation upon the seas, outside territorial waters, alike in peace and in war, except as the seas may be closed in whole or in part by international action for the enforcement of international covenants.

"3. The removal, so far as possible, of all economic barriers and the establishment of an equality of trade conditions among all the nations consenting to the peace and associating themselves for its maintenance.

"4. Adequate guarantees given and taken that national armaments will be reduced to the lowest point consistent with domestic safety.

"5. A free, open-minded and absolutely impartial adjustment of all colonial claims, based upon a strict observance of the principle that in determining all such questions of sovereignty the interests of the population concerned must have equal weight with the equitable claims of the government whose title is to be determined.

"6. The evacuation of all Russian territory and such a settlement of all questions affecting Russia as will secure the best and freest co-operation of the other nations of the world in obtaining for her an unhampered and unembarrassed opportunity for the independent determination of her own political development and national policy and assure her of a sincere welcome into the society of free nations under institutions of her own choosing; and, more than a welcome, assistance also of every kind that she may need and may herself desire. The treatment accorded Russia by her sister nations in the months to come will be the acid test of their good-will, of their comprehension of her needs as distinguished from their own interests, and of their intelligent and unselfish sympathy.

"7. Belgium, the whole world will agree, must be evacuated and restored without any attempt to limit the sovereignty which she enjoys in common with all other free nations. No other single act will serve as this will serve to restore confidence among the nations in the laws which they have themselves set and determined for the government of their relations with one another. Without this healing act the whole structure and validity of international law is forever impaired.

"8. All French territory should be freed and the invaded portions restored and the wrong done to France by Prussia in 1871 in the matter of Alsace-Lorraine, which has unsettled the peace of the world for nearly fifty years, should be righted in order that peace may once more be made secure in the interests of all.

"9. A readjustment of the frontiers of Italy should be effected along clearly recognizable lines of nationality.

"10. The peoples of Austria-Hungary, whose place among the nations we wish to see safeguarded and assured, should be accorded the freest opportunity of autonomous development.

"11. Rumania, Serbia and Montenegro should be evacuated; occupied territories restored; Serbia accorded free and secure access to the sea; and the relations of the several Balkan States to one another determined by friendly counsel along historically established lines of allegiance and nationality; and international guarantees of the political and economic independence and territorial integrity of the several Balkan States should be entered into.

"12. The Turkish portions of the present Ottoman empire should be assured a secure sovereignty, but the other nationalities which are now under Turkish rule should be assured

an undoubted security of life and an absolutely unmolested opportunity of autonomous development, and the Dardanelles should be permanently opened as a free passage to the ships and commerce of all nations under international guarantees,

"13. An independent Polish State should be erected which should include the territories inhabited by indisputably Polish populations, which should be assured a free and secure access to the sea, and whose political and economic independence and territorial integrity should be guaranteed by international covenant.

"14. A general association of nations must be formed under specific covenants for the purpose of affording mutual guarantees of political independence and territorial integrity to great and small States alike."

Secret Treaties.— When the World War broke out in the summer of 1914 Italy, although a member of the Triple Alliance, declared her neutrality. Her interests lay counter to, rather than in accord with, those of Austria-Hungary and Germany. Moreover, under Article VII of the Alliance, she put forth a claim at the Austrian Court for territorial compensation contingent upon the invasion of Serbia. This claim was vigorously resisted, but on 20 Dec. 1914, Count Berchtold yielded the principle. The Italian Foreign Minister Sonnino next proceeded to demand that the compensation should be made from Austro-Hungarian territory itself. He made it clear that what was wanted was the Trentino and Trieste. After long negotiations, Baron Burian, who had succeeded Count Berchtold as Minister of Foreign Affairs, intimated that any cession of Austro-Hungarian territory was impossible, and countered with demands for compensation because of the Italian occupation of the Dodecanese Islands during the war with the Ottoman empire. Whereupon Italy withdrew her former proposals and served notice on Austria-Hungary that she would regard an invasion of Serbia as a violation of the stipulations of the Triple Alliance.

Germany here intervened to prevent war, and Austria-Hungary was persuaded to agree to the principle of cession of territory. Since, however, Italy insisted upon immediate cession and Austria-Hungary resisted this demand, Germany offered to guarantee that the cession should be made at the conclusion of peace. This Sonnino refused, and 24 March 1915, Burian agreed "to a cession of territories in the southern Tyrol, including the city of Trent." Sonnino replied that the offer was inadequate. On 8 April 1915, Sonnino made his final demands. Italy must have all the Italian Trentino and a part of Istria. Trieste was to be constituted a free state. In return Italy was to pay 200,000,000 lire in gold, and guarantee neutrality during the war.

The refusal of Count Burian was a foregone conclusion, and Italy immediately came to terms with the Allies in a secret treaty signed at London. According to this agreement, Italy was to enter the war on the side of the Allies, and in return for this, there was allotted to her, if she could conquer it, a mass of Austro-Hungarian territory on the coast of the Adriatic, including all of Gorizia, Gradisca and Istria, with the city of Trieste, together with the coastal province of Dalmatia as far as a line just north of Spalato. In addition she was to receive most of the Dalmatian islands, and practically all of the Trentino. On 3 May 1915, Italy declared herself no longer bound by the Triple Alliance and on 23 May pronounced a state of war with Austria-Hungary.

Immediately after the outbreak of the World War the late King Carol of Rumania announced to his advisers his desire to align the country with the Central Powers. The majority of the council refused to give their assent, and Rumania remained neutral. Italy's declaration of war against Austria-Hungary was generally believed to presage the entrance of Rumania upon the side of the Allies, and in fact conversations between Italy and Rumania on the subject had actually taken place. They were without avail, however. In April and May 1916, arrangements were entered into with Germany and Austria-Hungary for the purchase and shipment of Rumanian grain which seemed to foreshadow an alignment with those powers. This also proved to be unfounded, and on 17 Aug. 1916, Rumania signed a secret treaty with the Quadruple Alliance by which she agreed to enter the war on the side of the Allies.

It was stipulated in this treaty that France, Great Britain, Italy and Russia should guarantee the territorial integrity of the kingdom of Rumania in the whole extent of its frontiers; that Rumania should engage to declare war on Austria-Hungary under the conditions stipulated in an accompanying military convention; that Rumania should cease to make economic and commercial exchanges with the enemies of the Allies; that France, Great Britain, Italy and Russia should recognize Rumania's right to annex certain territories in Austria-Hungary, chiefly occupied by Rumanian populations; that both Rumania and the Quadruple Alliance should agree not to make peace separately. The military convention stipulated that Rumania was to attack Austria-Hungary on 28 August; that the Russian army was to aid by vigorous action, especially in Bukowina; that the Russian fleet should guard the Rumanian coast, having the right to use the port of Constanza; that Russia was to send two divisions of infantry and one of cavalry to aid Rumania against the Bulgarians; that the Allies were to make an offensive immediately from Salonica; and that Rumania was to receive munitions and war materials from the Allies by way of Russia.

When the United States seemed likely to enter the war, Japan feeling it wise to insure her reward for her participation in the operations against Germany, sought certain definite promises from the Allies. Viscount Monoto, the Japanese Minister of Foregin Affairs, took the matter up with the British Ambassador at Tokio early in 1917. On 16 February, the Ambassador replied:

"My dear Excellency: With reference to the subject of our conversation of the 27th ultimo, when your Excellency informed me of the desire of the Imperial Government to receive an assurance that on the occasion of a peace conference his Britannic Majesty's Government will support the claims of Japan in regard to the disposal of Germany's rights in Shantung and possessions in the islands north of the equator, I have the honor under instructions received from his Britannic Majesty's principal Secretary of State for Foreign Affairs

to communicate to you the following message from his Britannic Majesty's Government:

"'His Britannic Majesty's Government accede with pleasure to the request of the Japanese Government for an assurance that they will support Japan's claim in regard to the disposal of Germany's rights in Shantung and possessions in the islands north of the equator on the occasion of the peace conference; it being understood that the Japanese Government will in the eventual peace settlement treat in the same spirit Great Britain's claims to the German islands south of the equator.'"

To a like inquiry addressed to France, a favorable reply was received. "The Government of the French Republic is disposed to give the Japanese Government its accord in regulating at the time of the peace negotiations questions vital to Japan concerning Shantung and the German islands in the Pacific north of the equator. It also agrees to support the demands of the Imperial Japanese Government for the surrender of the rights of Germany possessed before the war in this Chinese province and these islands."

The Russian Ambassador wrote briefly to Viscount Monoto on 20 February, committing Russia to support the Japanese claims, while Italy gave her promise after negotiations conducted at Rome.

The Debâcle in 1918.—On 25 Jan. 1918 Count von Hertling, Imperial German Chancellor, and Count Czernin, Austro-Hungarian Foreign Minister, made answer to the statements of war aims set forth by Premier Lloyd George and President Wilson. The reply of the former was equivocal and most unsatisfactory while that of the latter went far to meet Mr. Wilson's demands. Czernin, however, refused to discuss the principle of self-determination for the peoples of Austria-Hungary, holding that to be a matter of domestic policy for his government.

On 11 Feb. 1918 President Wilson in an address to the Congress laid down four principles the acceptance of which, he believed, would pave the way to a discussion of the terms of peace. These four principles were in substance: (1) Each part of the final settlement to be based on the justice of that particular case; (2) peoples and provinces not to be bartered as chattels from one sovereignty to another; (3) territorial settlements to be made in accord with the aspirations of the populations concerned; (4) national aspirations to be satisfied as far as possible without perpetuating or sowing seeds of discord.

About this time the Lichnowsky Memorandum (q.v.) was made public and created a profound impression in Allied and neutral countries since it proved from an enemy source England's conciliatory attitude in the summer of 1914 and Germany's encouragement of Austria's attack on Serbia. In June there followed the revelations of Dr. Wilhelm Mühlon, a director of the Krupp works at Essen. In his book, 'The Devastation of Europe' he wrote: "People blame our diplomats for muddling the war. My opinion is that these diplomats have been handicapped by the power, the vacillating character, and the continued interference of the kaiser in their work. Only men who would dance to his piping could remain in office." . . .

On 24 June 1918 the German Foreign Minister, von Kühlmann, stated that the war could not be won by arms alone and that peace would come only through negotiation. In the weeks following this statement it became apparent that a fast-growing number of Germans saw the hopelessness of victory on the field, and there was an ever-increasing public opinion in favor of a peace by negotiation. On 4 July President Wilson in an address at Mount Vernon reaffirmed the war aims of the United States and declared that there could be no compromise. "What we seek is the reign of law based upon the consent of the governed and sustained by the organized opinion of mankind."

Dissension among the Central Powers had now become evident. Bulgaria's aims conflicted with those of Turkey and Hungary became estranged from Austria. In August the United States after much discussion arrived at an agreement with Japan in regard to joint intervention in Siberia. In September, the Austrian government sent a note to all other governments proposing a conference to discuss peace terms but not in a binding manner; Germany proposed to Belgium to restore her economic and political independence on certain conditions, one of which involved the restoration of the German colonies. The result of these peace efforts was negligible; in the field the offensive had now passed to the Entente and the will to conquer had seized hold of their peoples. The prospect of defeat, very apparent in October 1918, accentuated the differences between Germany and her Allies. On 30 September von Hertling resigned the chancellorship and von Hintze, von Kühlmann's successor, resigned the portfolio of Foreign Affairs. Prince Max of Baden, a moderate in politics, became chancellor on 2 October and Dr. Solf was made foreign secretary. Scheidemann and Bauer, Socialists, and Erzberger and Groeber, Centrists, became members of the new ministry which set about making radical changes in Germany's political system. On 5 October Prince Max's message of peace to President Wilson was made public in the United States. The note, which proved the first step which led to the conclusion of hostilities, accepted as a basis for peace the program laid down by the President in the "14 Points" message of 8 Jan. 1918, and in his address of 27 September at New York, in which the President had restated the purposes of the war. In the American reply dispatched 8 October, the President said: "The good faith of any discussion would manifestly depend upon the consent of the Central Powers immediately to withdraw their forces everywhere from invaded territory.

"The President also feels that he is justified in asking whether the imperial chancellor is speaking merely for the constituted authorities of the empire who have so far conducted the war. He deems the answer to these questions vital from every point of view."

Dr. Solf, the German Foreign Secretary, replied on 12 October, saying the chancellor spoke "in the name of the German government and of the German people." To this the United States replied on the 14th to the effect that the conditions of an armistice must be left to the military authorities. Dr. Solf replied on 21 October accepting the proposal to evacuate occupied territories and stating that U-boat commanders had been enjoined from torpedoing passenger ships.

On 27 October Germany requested proposals for an armistice and was referred to Marshal Foch. Meanwhile, Bulgaria had capitulated and Austria had initiated separate proposals for an armistice. Hostilities ceased on the Austrian front on 4 November, and a few days later German delegates arrived at French Great Headquarters to receive the terms of the armistice, which they signed at 5 A.M. (French time) on 11 Nov. 1918. See THE ARMISTICES in this section.

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16. FINAL REPORT OF GEN. JOHN J. PERSHING. General John J. Pershing, Commander-in-Chief of the American Expeditionary Forces in Europe, submitted his final report to the Secretary of War, Newton D. Baker, late in November and it was made public 13 Dec. 1919. The complete report follows verbatim:

GENERAL HEADQUARTERS AMERICAN EXPEDITIONARY FORCES

September 1, 1919.

To the Secretary of War:

SIR: I have the honor to submit herewith my final report as Commander-in-Chief of the American Expeditionary Forces in Europe.

PART I.

Period of Organization.— I assumed the duties of this office on May 26, 1917, and, accompanied by a small staff, departed for Europe on board the S. S. *Baltic* May 28. We arrived at London on June 9 and, after spending some days in consultation with the British authorities, reached Paris on June 13.

Following the rather earnest appeals of the Allies for American troops, it was decided to send to France, at once, 1 complete division and 9 newly organized regiments of Engineers. The Division was formed of regular regiments, necessary transfers of officers and men were made, and recruits were assigned to increase these units to the required strength.

The offer by the Navy Department of one regiment of Marines to be reorganized as Infantry was accepted by the Secretary of War, and it became temporarily a part of the First Division.

Prior to our entrance into the war, the regiments of our small army were very much scattered, and we had no organized units, even approximating a division, that could be sent overseas prepared to take the field. To meet the new conditions of warfare an entirely new organization was adopted in which our Infantry divisions were to consist of four regiments of Infantry of about treble their original size, three regiments of Artillery, 14 machine-gun companies, one Engineer regiment, one Signal battalion, one troop of Cavalry, and other auxiliary units, making a total strength of about 28,000 men.

Military Situation.— In order that the reasons for many important decisions reached in the early history of the American Expeditionary Forces may be more clearly understood and the true value of the American effort more fully appreciated, it is desirable to have in mind the main events leading up to the time of our entry into the war.

1914.— Although the German drive of 1914 had failed in its immediate purpose, yet her armies had made very important gains. German forces were in complete possession of Belgium and occupied rich industrial regions of northern France, embracing one-fourteenth of her population and about three-fourths of her coal and iron. The German armies held a strongly fortified line 468 miles in length, stretching from the Swiss border to Nieuport on the English Channel; her troops were within 48 miles of Paris and the initiative remained in German hands.

In the east the rapidity of the Russian mobilization forced Germany, even before the Battle of the Marne, to send troops to that frontier, but the close of 1914 found the Russian armies ejected from East Prussia and driven back on Warsaw.

The entry of Turkey into the war, because of the moral effect upon the Moslem world and the immediate constant threat created against Allied communications with the Far East, led to an effort by the Allies in the direction of the Dardanelles.

1915.— Italy joined the Allies in May and gave their cause new strength, but the effect was more or less offset when Bulgaria entered on the side of the Central Powers.

The threatening situation on the Russian front and in the Balkans was still such that Germany was compelled to exert an immediate offensive effort in those directions and to maintain only a defensive attitude on the western front. German arms achieved a striking series of successes in the vicinity of the Mazurian Lakes and in Galicia, capturing Warsaw, Brest-Litovsk, and Vilna. The Central Powers overran Serbia and Montenegro. Meanwhile, the Italian armies forced Austria to use approximately one-half of her strength against them.

In the west, the French and British launched offensives which cost the German armies considerable loss; but the objectives were limited and the effect was local.

The Dardanelles expedition, having failed in its mission, was withdrawn in January, 1916. In Mesopotamia the Allied operations had not been successful. Although the British fleet had established its superiority on the sea, yet the German submarine blockade had developed into a serious menace to Allied shipping.

1916.— Germany no doubt believed that her advantage on the eastern front at the close of 1915 again warranted an offensive in the west, and her attack against Verdun was accordingly launched in the spring of 1916. But Russia was not yet beaten and early in June, aided at the same time by the threat of an Italian offensive in the west, she began the great drive in Galicia that proved so disastrous to Austria.

Rumania, having entered on the side of the Allies, undertook a promising offensive against Austria. The British and French Armies attacked along the Somme. Germany quickly returned to the defensive in the west, and in September initiated a campaign in the east which, before the close of 1916, proved unfortunate for Russia as well as Rumania.

Retaining on the eastern front the forces considered sufficient for the final conquest of Russia, Germany prepared to aid Austria in an offensive against Italy. Meanwhile, the Russian revolution was well under way and, by the midsummer of 1917, the final collapse of that government was almost certain.

The relatively low strength of the German forces on the western front led the Allies with much confidence to attempt a decision on this front; but the losses were very heavy and the effort signally failed. The failure caused a serious reaction especially on French morale, both in the army and throughout the country, and attempts to carry out extensive or combined operations were indefinitely suspended.

In the five months ending June 30, German submarines had accomplished the destruction of more than three and one-quarter million tons of Allied shipping. During three years Germany had seen practically all her offensives except Verdun crowned with success. Her battle lines were held on foreign soil and she had withstood every Allied attack since the Marne. The German general staff could now foresee the complete elimination of Russia, the possibility of defeating Italy before the end of the year and, finally, the campaigns of 1918 against the French and British on the western front which might terminate the war.

It can not be said that German hopes of final victory were extravagant, either as viewed at that time or as viewed in the light of history. Financial problems of the Allies were difficult, supplies were becoming exhausted and their armies had suffered tremendous losses. Discouragement existed not only among the civil population but throughout the armies as well. Such was the Allied morale that, although their superiority on the western front during the last half of 1916 and during 1917 amounted to 20 per cent, only local attacks could be undertaken and their effect proved wholly insufficient against the German defense. Allied resources in man power at home were low and there was little prospect of materially increasing their armed strength, even in the face of the probability of having practically the whole military strength of the Central Powers against them in the spring of 1918.

This was the state of affairs that existed when we entered the war. While our action gave the Allies much encouragement yet this was temporary, and a review of conditions made it apparent that America must make a supreme material effort as soon as possible. After duly considering the tonnage possibilities I cabled the following to Washington on July 6, 1917:

Plans should contemplate sending over at least 1,000,000 *men by next May.*

Organization Projects.— A general organization project, covering as far as possible the personnel of all combat, staff, and administrative units, was forwarded to Washington on July 11. This was prepared by the

Operations Section of my staff and adopted in joint conference with the War Department Committee then in France. It embodied my conclusions on the military organization and effort required of America after a careful study of French and British experience. In forwarding this project I stated:

It is evident that a force of about 1,000,000 is the smallest unit which in modern war will be a complete, well-balanced, and independent fighting organization. However, it must be equally clear that the adoption of this size force as a basis of study should not be construed as representing the maximum force which should be sent to or which will be needed in France. It is taken as the force which may be expected to reach France in time for an offensive in 1918, and as a unit and basis of organization. Plans for the future should be based, especially in reference to the manufacture of artillery, aviation, and other material, on three times this force — i. e., at least 3,000,000 men.

With a few minor changes, this project remained our guide until the end. While this general organization project provided certain Services of Supply troops, which were an integral part of the larger combat units, it did not include the great body of troops and services required to maintain an army overseas. To disembark 2,000,000 men, move them to their training areas, shelter them, handle and store the quantities of supplies and equipment they required, called for an extraordinary and immediate effort in construction. To provide the organization for this purpose, a project for engineer services of the rear, including railways, was cabled to Washington August 5, 1917, followed on September 18, 1917, by a complete service of the rear project, which listed item by item the troops considered necessary for the Services of Supply.

In order that the War Department might have a clear-cut program to follow in the shipment of personnel and material to insure the gradual building up of a force at all times balanced and symmetrical, a comprehensive statement was prepared covering the order in which the troops and services enumerated in these two projects should arrive. This schedule of priority of shipments, forwarded to the War Department on October 7, divided the initial force called for by the two projects into six phases corresponding to combatant corps of six divisions each.

The importance of the three documents, the general organization project, the service of the rear project, and the schedule of priority of shipments, should be emphasized, because they formed the basic plan for providing an army in France together with its material for combat, construction, and supply.

American Front and Line of Communications.— Before developing plans for a line of communications it was necessary to decide upon the probable sector of the front for the eventual employment of a distinctive American force. Our mission was offensive and it was essential to make plans for striking the enemy where a definite military decision could be gained. While the Allied armies had endeavored to maintain the offensive, the British, in order to guard the Channel ports, were committed to operations in Flanders and the French to the portion of the front protecting Paris. Both lacked troops to operate elsewhere on a large scale.

To the east the great fortified district east of Verdun and around Metz menaced central France, protected the most exposed portion of the German line of communications, that between Metz and Sedan, and covered the Briey iron region, from which the enemy obtained the greater part of the iron required for munitions and material. The coal fields east of Metz were also covered by these same defenses. A deep advance east of Metz, or the capture of the Briey region, by threatening the invasion of rich German territory in the Moselle Valley and the Saar Basin, thus curtailing her supply of coal or iron, would have a decisive effect in forcing a withdrawal of German troops from northern France. The military and economic situation of the enemy, therefore, indicated Lorraine as the field promising the most fruitful results for the employment of our armies.

The complexity of trench life had enormously increased the tonnage of supplies required by troops. Not only was it a question of providing food but enormous quantities of munitions and material were needed. Upon the railroads of France fell the burden of meeting the heavy demands of the three and one-half million Allied combatants then engaged.

The British were crowding the Channel ports and the French were exploiting the manufacturing center of Paris, so that the railroads of northern France were already much overtaxed. Even though the Channel ports might be used to a limited extent for shipments through England, the railroads leading eastward would have to cross British and French zones of operation, thus making the introduction of a line of communications based on ports and railways in that region quite impracticable. If the American Army was to have an independent and flexible system it could not use the line behind the British-Belgium front nor those in the rear of the French front covering Paris.

The problem confronting the American Expeditionary Forces was then to superimpose its rail communications on those of France where there would be the least possible disturbance to the arteries of supply of the two great Allied armies in the field. This would require the utmost use of those lines of the existing French railroad system that could bear an added burden. Double-track railroad lines from the ports of the Loire and the Gironde Rivers unite at Bourges, running thence via Nevers, Dijon, and Neufchateau, with lines radiating therefrom toward the right wing of the Allied front. It was estimated that these with the collateral lines available, after considerable improvement, could handle an additional 50,000 tons per day, required for an army of 2,000,000 men. The lines selected, therefore, were those leading from the comparatively unused south-Atlantic ports of France to the northeast where it was believed the American Armies could be employed to the best advantage.

In the location of our main depots of supply, while it was important that they should be easily accessible, yet they must also be at a safe distance, as we were to meet an aggressive enemy capable of taking the offensive in any one of several directions. The area embracing Tours, Orleans, Montargis, Nevers, and Chateauroux was chosen, as it was centrally located with regard to all points on the arc of the western front.

The ports of Saint Nazaire, La Pallice, and Bassens were designated for permanent use, while Nantes, Bordeaux, and Pauillac were for emergency use. Several smaller ports, such as Saint Malo, Sables-d'Olonne, and Bayonne, were available chiefly for the importation of coal from England. From time to time, certain trans-Atlantic ships were sent to Le Havre and Cherbourg. In anticipation of a large increase in the amount of tonnage that might be required later, arrangements were made during the German offensive of 1918 to utilize the ports of Marseilles and Toulon as well as other smaller ports on the Mediterranean.

For all practical purposes the American Expeditionary Forces were based on the American Continent. Three thousand miles of ocean to cross with the growing submarine menace confronting us, the quantity of ship tonnage that would be available then unknown and a line of communications by land 400 miles long from French ports to our probable front presented dimculties that seemed almost insurmountable as compared with those of our Allies.

For purposes of local administration our line of communications in France was subdivided into districts or sections. The territory corresponding to and immediately surrounding the principal ports were, respectively, called base sections, with an intermediate section embracing the region of the great storage depots and an advance section extending to the zone of operations, within which the billeting and training areas for our earlier divisions were located.

In providing for the storage and distribution of reserve supplies an allowance of 45 days in the base sections was planned, with 30 days in the intermediate section and 15 days in the advance section. After the safety of our sea transport was practically assured, this was reduced to a total of 45 days, distributed proportionately. When the Armistice was signed all projects for construction had been completed and supplies were on hand to meet the needs of 2,000,000 men, while further plans for necessary construction and for the supply of an additional 2,000,000 were well under way.

General Staff.— The organization of the General Staff and supply services was one of the first matters to engage my attention. Our situation in this regard was wholly unlike that of our Allies. The French Army was at home and in close touch with its civil government and war department agencies. While the British were organized on an overseas basis, they were within easy reach of their base of supplies in England. Their problems of supply and replacement were simple as compared with ours. Their training could be carried out at home with the experience of the front at hand, while our troops must be sent as ships were provided and their training resumed in France where discontinued in the States. Our available tonnage was inadequate to meet all the initial demands, so that priority of material for combat and construction, as well as for supplies that could not be purchased in Europe, must be established by those whose perspective included all the services and who were familiar with general plans. For the proper direction and co-ordination of the details of administration, intelligence, operations, supply, and training, a General Staff was an indispensable part of the Army.

The functions of the General Staff at my head-

quarters were finally allotted to the five sections, each under an Assistant Chief of Staff, as follows: To the First, or Administrative Section—ocean tonnage, priority of overseas shipments, replacement of men and animals, organization and types of equipment for troops, billeting, prisoners of war, military police, leaves and leave areas, welfare work and amusements; to the Second, or Intelligence Section — information regarding the enemy, including espionage and counter-espionage, maps, and censorship; to the Third, or Operations Section — strategic studies and plans and employment of combat troops; to the Fourth Section — co-ordination of supply services, including Construction, Transportation, and Medical Departments, and control of regulating stations for supply; to the Fifth, or Training Section — tactical training, schools, preparation of tactical manuals, and athletics. The same system was applied in the lower echelons of the command down to include divisions, except that in corps and divisions the Fourth Section was merged with the First and the Fifth Section with the Third.

As the American Expeditionary Forces grew, it was considered advisable that, in matters of procurement, transportation, and supply, the chiefs of the several supply services, who had hitherto been under the General Staff at my headquarters, should be placed directly under the supervision of the commanding general, Services of Supply. At General Headquarters, a Deputy Chief of Staff to assist the Chief of Staff was provided, and the heads of the five General Staff sections became Assistant Chiefs of Staff.

The General Staff at my headquarters thereafter concerned itself with the broader phase of control. Under my general supervision and pursuant to clearly determined policies, the Assistant Chiefs of Staff, coordinated by the Chief of Staff, issued instructions and gave general direction to the great combat units and to the Services of Supply, keeping always in close touch with the manner and promptness of their fulfillment. Thus a system of direct responsibility was put into operation which contemplated secrecy in preparation, prompt decision in emergency and co-ordinate action in execution.

With the growth of our forces the demand for staff officers rapidly increased, but the available number of officers trained for staff duty was very limited. To meet this deficiency, a General Staff college was organized at Langres on November 28, 1917, for the instruction of such officers as could be spared. An intensive course of study of three months was prescribed, embracing the details of our staff organization and administration, and our system of supply, and teaching the combined employment of all arms and services in combat. Officers were carefully chosen for their suitability and, considering the short time available, graduates from this school returned well equipped for staff duties and with a loyal spirit of common service much accentuated. The Staff College carried to completion four courses of three months each, graduating 537 staff officers.

Training.— Soon after our arrival in Europe careful study was made of the methods followed by our Allies in training combat troops. Both the French and British maintained continuously a great system of schools and training centres, which provided for both theoretical and practical instruction of inexperienced officers and noncommissioned officers. These centers were required not only to train new troops, but to prepare officers and soldiers for advancement by giving them a short course in the duties of their new grades. These school systems made it possible to spread rapidly a knowledge of the latest methods developed by experience and at the same time counteract false notions.

A similar scheme was adopted in August, 1917, for our Armies in which the importance of teaching throughout our forces a sound fighting doctrine of our own was emphasized. It provided for troop training in all units up to include divisions. Corps centers of instruction for noncommissioned officers and unit commanders of all arms were established. These centers also provided special training for the instructors needed at corps schools. Base training centers for replacement troops and special classes of soldiers, such as cooks and mechanics, were designated. The army and corps schools were retained under the direct supervision of the Training Section, General Staff. The schools mentioned graduated 21,330 noncommissioned officers and 13,916 officers.

Particular care was taken to search the ranks for the most promising soldiers, in order to develop leaders for the command of platoons and companies. There were graduated from these candidate schools in France 10,976 soldiers. It was planned to have 22,000 infantrymen under instruction by January 1, 1919, graduating 5,000 to 6,000 each month. In addition, there were to be graduated monthly 800 artillerymen, 400 engineers, and 200 signalmen, making a total of about 7,000 soldiers each month. Prior to November 14, 1918, 12,732 soldiers were commissioned as officers.

It must not be thought that such a system is ideal, but it represents a compromise between the demand for efficiency and the imperative and immediate necessity for trained replacement officers.

Every advantage was taken of the experience of our Allies in training officers. It was early recommended to the War Department that French and British officers be asked for to assist in the instruction of troops in the United States. Pending the organization of our own schools, a large number of our officers were sent to centers of instruction of the Allied armies. The training of our earlier divisions was begun in close association with the French divisions, under conditions set forth in the following paragraph on divisional training:

Trench warfare naturally gives prominence to the defensive as opposed to the offensive. To guard against this, the basis of instruction should be essentially the offensive both in spirit and in practice. The defensive is accepted only to prepare for future offensive.

For training our Artillery units, special localities such as Valdahon, Coetquidan, Meucon, and Souge, had to be sought, and the instruction was usually carried on in conjunction with French artillery followed up later, as far as possible, with field practice in co-operation with our own Infantry.

The long period of trench warfare had so impressed itself upon the French and British that they had almost entirely dispensed with training for open warfare. It was to avoid this result in our Army and to encourage the offensive spirit that the following was published in October 1917.

1. . . . (a) The above methods to be employed must remain or become distinctly our own.

(b) All instruction must contemplate the assumption of a vigorous offensive. This purpose will be emphasized in every phase of training until it becomes a settled habit of thought.

(c) The general principles governing combat remain unchanged in their essence. This war has developed special features which involve special phases of training, but the fundamental ideas enunciated in our Drill Regulations, Small Arms Firing Manual, Field Service Regulations, and other service manuals remain the guide for both officers and soldiers and constitute the standard by which their efficiency is to be measured, except as modified in detail by instructions from these headquarters.

(d) The rifle and the bayonet are the principal weapons of the infantry soldier. He will be trained to a high degree of skill as a marksman, both on the target range and in field firing. An aggressive spirit must be developed until the soldier feels himself, as a bayonet fighter, invincible in battle.

(e) All officers and soldiers should realize that at no time in our history has discipline been so important; therefore, discipline of the highest order must be exacted at all times. The standards for the American Army will be those of West Point. The rigid attention, upright bearing, attention to detail, uncomplaining obedience to instructions required of the cadet will be required of every officer and soldier of our armies in France.

. . .

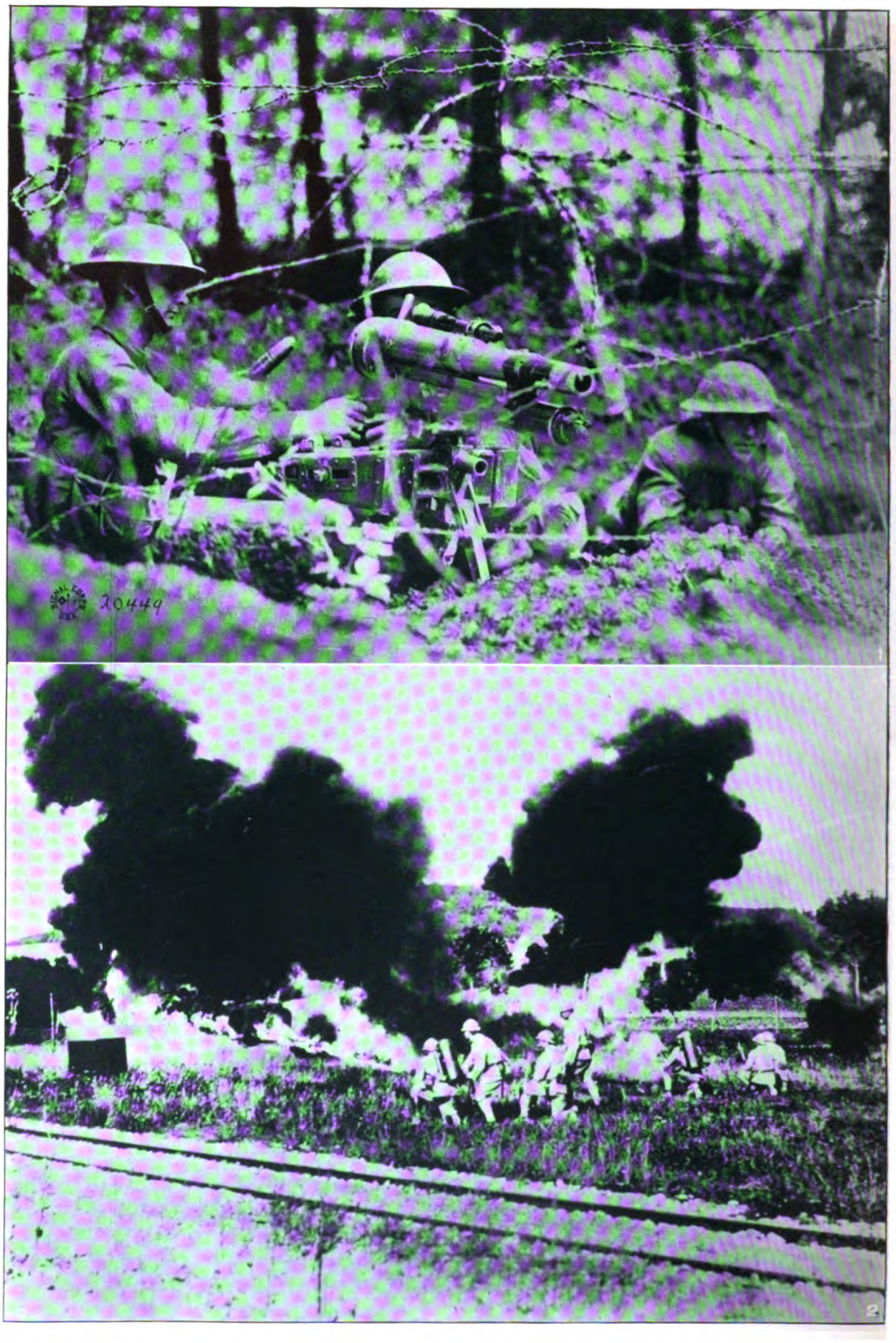
Recommendations were cabled to Washington emphasizing the importance of target practice and musketry training, and recommending that instruction in open warfare be made the mission of troops in the United States, while the training in trench warfare so far as necessary be conducted in France. Succeeding divisions, whether serving temporarily with the British or French, were trained as thus indicated. The assistance of the French units was limited to demonstrations, and, in the beginning, French instructors taught the use of French arms and assisted in the preparation of elementary trench warfare problems.

Assuming that divisions would arrive with their basic training completed in the United States, one month was allotted for the instruction of small units from battalions down, a second month of experience in quiet sectors by battalions, and a third month for field practice in open warfare tactics by division, including artillery. Unfortunately many divisions did not receive the requisite amount of systematic training before leaving the States and complete preparation of such units for battle was thus often seriously delayed.

The system of training profoundly influenced the combat efficiency of our troops by its determined insistence upon an offensive doctrine and upon training in warfare of movement. Instruction which had hitherto been haphazard, varying with the ideas and conceptions of inexperienced commanding officers and indifferent instructors, was brought under a system based on correct principles. Approved and systematic methods were maintained and enforced largely by the continual

1 Throwing hand grenades in the trenches

2 An advance through the woods



1 A 37 mm. gun in position

2 American troops practising with liquid fire

presence of members of the Training Section with the troops both during the training period and in campaign.

Intelligence.— Before our entry into the war, European experience had shown that military operations can be carried out successfully and without unnecessary loss only in the light of complete and reliable information of the enemy. Warfare with battle lines separated by short distances only, made possible the early acquirement of information, such as that obtained through airplane photography, observation from balloons and planes, sensitive instruments for detecting gun positions and raids to secure prisoners and documents. All such information, together with that from Allied sources, including military, political, and economical, was collected, classified, and rapidly distributed where needed.

From careful studies of the systems and actual participation by our officers in methods in use at various Allied headquarters, an Intelligence Service was evolved in our forces which operated successfully from its first organization in August 1917.

With us the simpler methods, such as observation from the air and ground and the exploitation of prisoners and documents, have proved more effective than the less direct means. Every unit from the battalion up had an intelligence detachment, but only in divisions and larger organizations did the intelligence agencies embrace all available means and sources, including radio interception stations and sound and flash-ranging detachments.

The subjects studied by the Intelligence Section embraced the location of the enemy's front line, his order of battle, the history and fighting value of his divisions, his manpower, his combat activities, circulation and movement, his defensive organizations, supply, construction and material, air service, radio service, strategy and tactics, and what he probably knew of our intentions. The political and economic conditions within the enemies' countries were also of extreme importance.

To disseminate conclusions, daily publications were necessary, such as a Secret Summary of Intelligence containing information of the broadest scope, which concerned only General Headquarters; and a Summary of Information, distributed down to include the divisions, giving information affecting the western front. A Press Review and a Summary of Air Intelligence were also published.

Maps showing graphically the disposition and movement of enemy troops in our front were the best means for distributing information to our troops. At the base printing plant and at General Headquarters base maps were prepared while mobile printing plants, mounted on trucks, accompanied corps and army headquarters. Combat troops were thus supplied with excellent maps distributed, just before and during an attack, down to include company and platoon commanders. Between July 1 and November 11, 1918, over 5,000,000 maps were used.

The secret service, espionage and counter-espionage, was organized in close co-operation with the French and British. To prevent indiscretions in the letters of officers and soldiers, as well as in articles written for the press, the Censorship Division was created. The Base Censor examined individual letters when the writer so desired, censored all mail written in foreign languages, of which there were over 50 used, and frequently checked up letters of entire organizations.

The policy of press censorship adopted aimed to accomplish three broad results:

To prevent the enemy from obtaining important information of our forces.

To give to the people of the United States the maximum information consistent with the limitations imposed by the first object.

To cause to be presented to the American people the facts as they were known at the time.

There were with our forces 36 regularly accredited correspondents, while visiting correspondents reached a total of 411.

Summer of 1917 to Spring of 1918.— In order to hinder the enemy's conquest of Russia and, if possible, prevent a German attack on Italy, or in the near east, the Allies sought to maintain the offensive on the western front as far as their diminished strength and morale would permit. On June 7, 1917, the British took Messines, while a succession of operations known as the Third Battle of Ypres began on July 31 and terminated with the capture of the Passchendaele Ridge November 6–10. The British attack at Cambrai is of special interest, since it was here that American troops (Eleventh Engineers) first participated in active fighting.

The French successfully attacked on a limited front near Verdun, capturing Mort Homme on August 20 and advancing their lines to La Forge Brook. In another offensive, begun on October 23, they gained considerable ground on Chemin des Dames Ridge. These French attacks were characterized by most careful preparation to insure success in order to improve the morale of their troops.

Notwithstanding these Allied attacks on the western front, the immense gains by the German armies in the east, culminating at Riga on September 3, precipitated the collapse of Russia. The following month, the Austrians with German assistance surprised the Italians and broke through the lines at Caporetto, driving the Italian armies back to the Piave River, inflicting a loss of 300,000 men, 600,000 rifles, 3,000 guns, and enormous stores. This serious crisis compelled the withdrawal of 10 French and British divisions from the western front to Italy. The German situation on all other theatres was so favorable that as early as November they began the movement of divisions toward the western front. If needed, her divisions could be withdrawn from the Italian front before the French and British dared recall their divisions.

At first the Allies could hardly hope for a large American Army. Marshal Joffre during his visit to America had made special request that a combat division be sent at once to Europe as visual evidence of our purpose to participate actively in the war, and also asked for Engineer regiments and other special service units.

The arrival of the First Division and the parade of certain of its elements in Paris on July 4 caused great enthusiasm and for the time being French morale was stimulated. Still Allied apprehension was deep-seated and material assistance was imperative. The following extract is quoted from the cabled summary of an Allied conference held on July 26 with the French and Italian Commanders-in-Chief and the British and French Chiefs of Staff:

General conclusions reached were necessity for adoption of purely defensive attitude on all secondary fronts and the withdrawing surplus troops for duty on western front. By thus strengthening western front believed Allies could hold until American forces arrive in numbers sufficient to gain ascendency.

The conference urged the immediate study of the tonnage situation with a view to accelerating the arrival of American troops. With the approach of winter, depression among the Allies over the Russian collapse and the Italian crisis was intensified by the conviction that the Germans would undertake a decisive offensive in the spring.

A review of the situation showed that with Russia out of the war the Central Powers would be able to release a large number of divisions for service elsewhere, and that during the spring and summer of 1918, without interfering with the *status quo* at Salonica, they could concentrate on the western front a force much stronger than that of the Allies. In view of this, it was represented to the War Department in December as of the utmost importance that the Allied preparations be expedited.

On December 31, 1917, there were 176,665 American troops in France and but one division had appeared on the front. Disappointment at the delay of the American effort soon began to develop. French and British authorities suggested the more rapid entry of our troops into the line and urged the amalgamation of our troops with their own, even insisting upon the curtailment of training to conform to the strict minimum of trench requirements they considered necessary.

My conclusion was that, although the morale of the German people and of the armies was better than it had been for two years, only an untoward combination of circumstances could give the enemy a decisive victory before American support as recommended could be made effective, provided the Allies secured unity of action. However, a situation might arise which would necessitate the temporary use of all American troops in the units of our Allies for the defensive, but nothing in the situation justified the relinquishment of our firm purpose to form our own Army under our own flag.

While the Germans were practicing for open warfare and concentrating their most aggressive personnel in shock divisions, the training of the Allies was still limited to trench warfare. As our troops were being trained for open warfare, there was every reason why we could not allow them to be scattered among our Allies, even by divisions, much less as replacements, except by pressure of sheer necessity. Any sort of permanent amalgamation would irrevocably commit America's fortunes to the hands of the Allies. Moreover it was obvious that the lack of homogeneity would render these mixed divisions difficult to maneuver and almost certain to break up under stress of defeat, with the consequent mutual recrimination. Again, there was no doubt that the realization by the German people that independent American divisions, corps, or armies were in the field with determined purpose would be a severe blow to German morale and prestige.

was determined that 85 per cent of these packages were received.

As soon as the Armistice was signed the Germans released large numbers of Allied prisoners who immediately started toward the Allied lines. Four American regional replacement departments were established, to which all returning Americans were sent until proper records could be made. Those in good physical condition were sent to their commands, while the others were sent to hospitals or to leave areas for a rest.

An Allied commission was formed in Berlin early in December, 1918, for the repatriation of Allied prisoners, with representatives from each of the American, British, French, and Italian Armies. American prisoners were evacuated through Switzerland in fully equipped trains, including hospital cars, provided by the Swiss Government and paid for by our Government. These were met by American trains at the Swiss border. It was planned to withdraw all our prisoners by this route, but a number had already been withdrawn through the northern ports and taken to England in British ships.

The Allied Commission obtained a statement of moneys paid Americans while in German prisons; investigated complaints concerning treatment of Americans; obtained possession of effects of prisoners who had died in captivity, or which had been left behind by those repatriated; and also located the graves of the American dead.

On November 11, 1918, there were 248 American officers and 3,302 men in the hands of the Germans, all of whom were evacuated by February 5, 1919. None of our prisoners were condemned to death, although 1 officer and 20 men died in captivity.

An Inter-Allied agreement of January 13, 1919, created a commission for the control of Russian prisoners in Germany. The British and American representatives, aided by small unarmed detachments, were charged with the administration of the Russion prison camps, and succeeded in discharging their duties despite the civil disorders in Germany.

Early in January, 1919, the Red Cross outlined a plan to send a commission to Germany to assist in caring for and feeding Russian prisoners, and an American officer was detailed to assist and accompany this commission. The Red Cross being financially unable to furnish the necessary food, arrangements were finally made with the French Government to furnish funds for its purchase from our Army stores, without any responsibility being assumed by the Army, as was desired by the Allied Food Commission. Such supplies as could be spared by the Army were sold to the French, and American officers were detailed to assist in their distribution. On April 10, 1919, the Supreme Allied War Council decided to give the German Government complete freedom in repatriating Russian prisoners of war, stipulating only that none should be repatriated by force, and that all who left must be provided with sufficient food for the journey.

Civil Administration of Occupied Territory.— To insure law and order, it was necessary that an American civil administration be created in the occupied territory. Different policies were adopted toward Luxemburg and occupied Germany, the former being a disarmed neutral and the latter occupied enemy territory. In both regions we issued proclamations defining our attitude toward the inhabitants.

In accordance with the precedent of our Government under similar circumstances, the local civil government remained in full possession of its former power, and retained jurisdiction over all civil matters. The organization of our civil administration in occupied territory provided for the control of civil affairs by the Officer in Charge of Civil Affairs in Occupied Territory, under whom Army, corps, and division commanders detailed suitable officers in local charge of civil matters. In the Grand Duchy of Luxemburg, civil affairs were regulated by a corresponding representative with an office in the city of Luxemburg.

The principle of requisitioning supplies was exercised extensively throughout the area, always under central control and without abuse of the privilege. Under a board of appraisal payment was made for all property requisitioned, the money being obtained from the German Government under the terms of the Armistice. Food and forage were not requisitioned, and during most of the period of occupation our officers and men were not allowed to purchase any German food and were forbidden to eat in the restaurants and cafés.

In Luxemburg, billeting arrangements and payment therefor were provided for by an agreement with the Government of Luxemburg.

Under instructions from the State Department, the interests of American citizens found in occupied Germany were referred to the American Embassy in Paris; in Luxemburg to the American Legation at The Hague.

We insisted upon the Germans maintaining all public utilities. After being inspected, measures were taken to assure priority of fuel supply in case of coal shortage due to strikes in the Ruhr and Saar districts or other causes. One of our chief problems was the maintenance and repair of roads and highways, and this at first necessitated the employment of soldier labor. As soon as possible a satisfactory system of road preservation and improvement was inaugurated, utilizing German civil labor.

To control and supervise the movement of funds and securities, all banks and banking houses were required to submit monthly reports. Trade and blockade regulations were controlled through the American Section of the Inter-Allied Economic Committee.

The Civil Administration issued instructions relative to courts. Army, corps and divisional commanders were authorized to convene military commissions and appoint superior provost courts for the respective districts; and commanding officers of each city, town or canton, appointed an inferior provost court. All of these courts were for the trial of offenses against the laws of war or the Military Government. Our legal machinery was simple, and successful results in maintaining law and order were due to uniform and strict enforcement of such few regulations as proved necessary.

Strict censorship was maintained over postal, telephone and telegraphic communications. Passes and circulation were first handled by the Department of Civil Affairs, but on January 24, 1919, the Third Army took charge of those matters.

In connection with the reconstruction work in France and Belgium, the Department of Civil Affairs prepared a record of all recovered stolen property and measures were taken to protect it against deterioration or unauthorized removal.

The fraternization problem was sharply raised by the sudden transition from the rigors of war conditions in France to the comforts of undisturbed German cities and homes, but a realization by our troops of their position in enemy territory and of their duty to maintain the dignity of their own country reduced infractions of rules on the subject to a minimum.

Execution of Armistice Terms.

The first Armistice agreement provided for supervision by a Permanent International Armistice Commission to function under the authority of the Commander-in-Chief of the Allied Armies. The United States, Great Britain, Belgium, France, Italy and Germany were represented on the Permanent International Armistice Commission. The chairmen of this commission and of the five main committees were French. These committees were organized to care specifically for the work in connection with material, transportation, prisoners of war, entretien, and restitution. The United States was represented on each of these main committees.

The Germans unsuccessfully attempted to enter the Permanent International Armistice Commission on the basis of negotiation. Many adjustments were made because of the difficulties under which the German authorities were working, but, in general, they were held strictly to the spirit of the terms of the Armistice agreement. Time of delivery was often extended, but penalties were imposed for failure to comply with the conditions. All aeroplanes were not obtained until a penalty was imposed of 20 horses for each undelivered plane. Evacuation of occupied territory, and repatriation of civilian inhabitants and of prisoners of war, were begun immediately and carried out promptly.

In the distribution among the Allied Armies of ordnance and aeroplanes surrendered by the enemy, the Belgian Army received one-tenth, American Army two-tenths, British Army three-tenths, and French Army four-tenths. Our share was 720 field guns, 534 heavy guns, 589 trench mortars, 10,356 machine guns and 340 aeroplanes. Railway rolling stock was divided according to the needs of the railway systems serving the different armies.

The question of expense of maintenance of the armies of occupation caused considerable discussion among the Allies and protests from the Germans. This was due to the diversity of opinion as to the items properly chargeable to the expense of an army of occupation. My policy was that, pending final settlement by the Peace Conference, Germany would be liable for all expenses of the American Army of Occupation; that any payments made by Germany for this purpose were to be considered as partial payments on account of the whole sum, and not as a liquidation of any specific expenses. Money was deposited in Coblenz banks to the credit of the United States, in amounts notified as necessary to cover all expenditures made in the

occupied area. The total expense as calculated by the different Allied Armies, before any of our troops were withdrawn, was based on the effective strength as shown by their Tables of Organization, and appears as follows:

Armies.	Officers	Men	Horses	Cost per month in francs
French.....	11,570	35,500	116,100	175,948,815 00
Belgian.....	1,834	39,430	11,600	30,195,142 60
British.....	12,000	240,000	70,000	127,935,000 00
United States	12,358	275,617	58,755	269,068,184 10
Total...	.....	.....	.....	603,147,141 70

United States Liquidation Commission.— In February, 1919, upon my recommendation, the Secretary of War appointed the United States Liquidation Commission, War Department, which had charge of the liquidation of our affairs in France, the sale of our property and installations and the settlement of claims exclusive of those arising out of torts, which were handled by the Renting, Requisition and Claims Service. While not under my supervision, the Liquidation Commission played such an important part in the closing chapter of our activities that some mention of it should be made in this report. With the dissolution of the American Expeditionary Forces we were confronted with the problem of disposing of large port and other installations and immense quantities of transportation, matériel, supplies and equipment. Much of this was of an immovable nature and the shipping situation forbade the transfer to the United States of most of the movable effects. There was little or no demand for many of the articles to be disposed of, and the expense of maintaining a force of caretakers until the market improved would have been prohibitive. The successful negotiations of the Commission led to the liquidation of our affairs with France by the payment of a lump sum to the United States by the French Government.

Relations with the Allies.— Our troops arrived in Europe after France and Great Britain had been fighting desperately for nearly three years, and their reception was remarkable in its cordiality. The resources of our Allies in men and material had been taxed to the limit, but they always stood ready to furnish us with needed supplies, equipment and transportation when at all available. We were given valuable assistance and co-operation in our training program by both the French and British armies, and when the shortage of labor personnel in our forces became acute the French Government rendered material assistance in the solution of this problem.

It was our good fortune to have a year in France to organize and train our forces. When our troops entered the battle the veteran soldiers of France and England gave them moral and physical support. The Artillery of our Allies often supported the advance of American troops; British and French tanks frequently co-operated with our Infantry; and their aviators fought in the air to assist the American soldier.

Throughout France our troops have been intimately associated with the French people, particularly the French peasant, and the relations growing out of these associations assure a permanent friendship between the two peoples. The small force of Americans serving in Italy was accorded a warm welcome and established with the Italian people the most friendly relations. The hospitable reception of those of our forces who passed through England has impressed upon us how closely common langauge and blood have brought together the British and ourselves.

The co-operation of our soldiers with the French, British, Belgians and Italians was decisive in bringing the war to a successful conclusion, and will have an equally decisive effect in welding together the bonds of sympathy and good will among the peoples of these nations and ourselves.

Welfare Work.

Allied Food Commission.— At the request of the Allied Food Commission a selected personnel of 320 officers and 464 men was placed at the disposal of the Commission. There was no other American personnel in Europe or elsewhere available for this necessary work. Our officers were sent to various countries in charge of food distribution, and were everywhere received with the utmost friendliness. These officers and men, by their executive and administrative ability and their energetic resourcefulness, were in a large measure responsible for the manner in which these food supplies were delivered to the various people in central Europe during a period of civil unrest or complete disorder. By their disinterested conduct of this charitable work, they won for the American Army the admiration of the populations whom they served.

Societies.— In their respective spheres of activity the Red Cross and Y. M. C. A. undertook the burden of supplying the needs of the entire American Expeditionary Forces. Their efforts were in many respects limited by a lack of tonnage. But shortage in tonnage, transportation, or personnel, meant inability to carry out completely their appointed tasks; whereas with the smaller societies it meant inability to expand. In order to avoid duplication of effort, it was directed in August, 1917, that the Red Cross confine its activities to relief work, and the Y. M. C. A. to amusement and recreation. The Knights of Columbus and the Salvation Army were later given official recognition. The Y. W. C. A., Jewish Welfare Board and American Library Association conducted their activities through one of the established societies.

The American Red Cross maintained within our zones a system of "Line of Communication Canteens," which furnished refreshments and relief to troops in transit and became a valuable feature of the Red Cross work. The statistical work of the searchers attached to statistical sections and to hospitals obtained much information for relatives. This society also aided in locating American prisoners to whom it sent food from Switzerland.

To avoid depleting our personnel, the Y. M. C. A. agreed to operate our canteens and was at first allotted 208 ship-tons per 25,000 men per month to bring supplies from the United States, but the requirements of other services later made it necessary to reduce this allotment to 100 tons. This materially reduced the valuable service the Y. M. C. A. might have rendered in this work. The termination of hostilities made it possible to relieve the society of this responsibility.

The need of greatly expanded welfare work after hostilities, such as athletics and education was at once recognized, and the co-operation of the welfare societies in all these activities was of inestimable value. Immediately after the Armistice steps were taken to provide diversion and entertainment for our troops. Entertainment officers were appointed in all units, and the Y. M. C. A. Entertainment Department furnished professionals and acted as a training and booking agency for soldier talent. Approximately 650 "soldier shows" were developed, which entertained hundreds of thousands of soldiers, who will remember this as one of the pleasant and unique enterprises of the American Expeditionary Forces.

The athletic program in the spring of 1919 culminated in the Inter-Allied games in June, held in the concrete stadium erected by our Engineers near Paris, the necessary funds being contributed by the Y. M. C. A. In number of participants and quality of entry, the games probably surpassed any of the past Olympic contests.

Leaves and Leave Areas.— A leave system announced in general orders provided for a leave of seven days every four months, but it was necessary to suspend the privilege during active operations. In the leave areas free-board and lodging at first-class hotels were provided for soldiers, and the Y. M. C. A. furnished recreational and amusement facilities. A number of new areas were opened by the Services of Supply immediately after the Armistice, improved transportation accommodations were eventually secured, and arrangements were made whereby men could visit England, Belgium and Italy.

It was my desire that every man in the American Expeditionary Forces should be given an opportunity to visit Paris before returning to the United States, but the crowded condition of the city during the Peace Conference, transportation difficulties, and other reasons, made it necessary to limit the number of such leaves.

Religious Work.— Religious work in our Army before the war was carried on by chaplains, one to each regiment. To meet the greatly increased size of regiments, legislation was recommended by me to provide not less than one chaplain for each 1,200 men. Although such act was passed in June, 1918, there was a continuous shortage of chaplains with the fighting units and in the hospitals and camps in the rear areas. This was largely met through the ready co-operation of the Welfare Societies who sent ministers and priests where most needed. Religious workers in the Y. M. C. A. and Knights of Columbus and Red Cross also aided in the work, the Red Cross sending chaplains to the States with units in many instances.

The religious work was directed and co-ordinated by a Board of Chaplains at general headquarters, of which Bishop Charles H. Brent was the head. With great devotion to duty this work was maintained despite a lack of transportation and other facilities. Chaplains, as never before, became the moral and spiritual leaders of their organizations, and established a high standard of active usefulness in religious work that made for patriotism, discipline and unselfish devotion to duty.

Educational Work.— Prior to the Armistice, educational work was conducted through the organization of voluntary classes under the Y. M. C. A., the popular subjects studied being French language, French history, and the causes of the war. After the Armistice, measures were taken for a systematic organization of non-military educational training.

The formal school work began January 2, with post schools. Then divisional educational centers gave the equivalent of high-school instruction and specialized on vocational training. The American Expeditionary Forces University at Beaune carried on undergraduate and graduate work for the technical professions, while postgraduate work was provided by the entrance of our officers and soldiers into French and British universities. Special schools were organized to meet demands, such as the Practical Agricultural School at Allery and the Art Training Center at Paris, for painting, sculpture, architecture and interior decoration, advanced students being entered in the best ateliers of Paris. Active instruction was carried on in the base hospitals and convalescent camps.

An important branch of the educational work was the field institute of short courses and educational extension lectures, organized to meet conditions due to the rapid repatriation of our soldiers and the constant movement of troops. At least half of our forces were reached by this means with brief intensive courses in business, trades, engineering, agriculture, occupational guidance, and in citizenship.

On April 15 all educational work came under the complete control of the Training Section of the General Staff. The advantage of this change in management was at once apparent in the better coordination of the work of an excellent body of educators. The total attendance in the organized school system of the American Expeditionary Forces was 230,020, of which number 181,475 attended post schools, 27,250 educational centers, 8,528 the American Expeditionary Forces University at Beaune, 367 Art Training Centers, 4,144 Mechanical Trade Schools, 6,300 French universities and 1,956 British universities. The attendance upon the institute short courses totaled 690,000 more, and at the extension lectures 750,000, giving a grand total of attendance at all educational formations of 1,670,020.

The educational work in the American Expeditionary Forces was of undoubted value, not only in improving morale, but in concrete benefit to the individual officer and soldier. It demonstrated satisfactorily that a combined military and educational program can be carried out in the Army with little detriment to pure military training and with decided advantage to the individual.

Stars and Stripes.— The *Stars and Stripes* was a weekly newspaper conceived with the idea of increasing the morale of American troops by providing a common means of voicing the thought of the entire American Expeditionary Forces. Edited and managed by enlisted men who declined promotion preferring to remain in the ranks in order to interpret the spirit of the Army, it was a great unifying force and materially aided in the development of an esprit de corps. It lent loyal and enthusiastic support to Army athletics and to the educational program. In leading the men of our Army to laugh at their hardships, it was a distinct force for good and helped to create a healthy viewpoint. The campaign it conducted for the benefit of French orphans resulted in a fund of 2,250,000 francs.

Appreciation.— In this brief summary of the achievements of the American Expeditionary Forces it would be impossible to cite in detail the splendid ability, loyalty and efficiency that characterized the service of both combatant and non-combatant individuals and organizations. The most striking quality of both officers and men was the resourceful energy and common sense employed, under all circumstances, in handling their problems.

The highest praise is due the commanders of armies, corps and divisions, and their subordinate leaders, who labored loyally and ably toward the accomplishment of our task, suppressing personal opinions and ambitions in the pursuit of the common aim; and to their staffs, who developed, with battle experience, into splendid teams without superiors in any army.

To my Chiefs of Staff, Major Gen. James G. Harbord, who was later placed in command of the Services of Supply, and Major Gen. James W. McAndrew, I am deeply indebted for highly efficient services in a post of great responsibility.

The important work of the staff at General Headquarters in organization and administration was characterized by exceptional ability and a fine spirit of co-operation. No chief ever had a more loyal and efficient body of assistants.

The officers and men of the Services of Supply fully realized the importance of their duties, and the operations of that vast business system were conducted in a manner which won for them the praise of all. They deserve their full share in the victory.

The American civilians in Europe, both in official and private life, were decidedly patriotic and loyal, and invariably lent encouragement and helpfulness to the armies abroad.

The various societies, especially their women, including those of the theatrical profession, and our army nurses, played a most important part in brightening the lives of our troops and in giving aid and comfort to our sick and wounded.

The navy in European waters, under command of Admiral Sims, at all times cordially aided the army. To our sister service we owe the safe arrival of our armies and their supplies. It is most gratifying to record that there has never been such perfect understanding between these two branches of the service.

Our armies were conscious of the support and co-operation of all branches of the government. Behind them stood the entire American people, whose ardent patriotism and sympathy inspired our troops with a deep sense of obligation, of loyalty and of devotion to the country's cause never equaled in our history.

Finally, the memory of the unflinching fortitude and heroism of the soldiers of the line fills me with great admiration. To them I again pay the supreme tribute. Their devotion, their valor and their sacrifices will live forever in the hearts of their grateful countrymen.

In closing this report, Mr. Secretary, I desire to record my deep appreciation of the unqualified support accorded me throughout the war by the President and yourself. My task was simplified by your confidence and wise counsel. I am, Mr. Secretary,

Very respectfully,

JOHN J. PERSHING,
General, Commander-in-Chief, American Expeditionary Forces.

17. THE PEACE CONFERENCE OF 1919. Composition and Organization.— That a conference of delegates of the nations at war with Germany and her allies should meet to formulate the terms of peace was a foregone conclusion; and no higher political body was needed to call it into existence. But the time and place of meeting, and the number of delegates of each nation to be represented were matters that had to be decided by some power that could speak for all. Such authority was found in the co-operative action of the foreign secretaries of the five great powers opposed to Germany. By cable and telegram, and with the assistance of Col. E. M. House, who acted for President Wilson, they agreed that the conference should meet in Paris on 18 Jan. 1919. They also drew up rules of procedure governing the sessions of the conference and decided what states should send delegates and how many could come from each.

Before the conference met much was said in the press about admitting newspaper reporters to the meetings. There seems to have existed an impression that the conference would debate matters in a general way, as in an ordinary parliament or congress, and that it would be well for the peoples of the world to know what their representatives were saying and doing. The reporters won their point formally, but it did them no good; for the plenary sessions were never characterized by debate and they occurred so rarely and lasted such a brief time that they may be described as the least important feature of the Peace Conference.

The first session was held on 18 Jan. 1919. At that time President Wilson had been in Europe more than a month. He had visited England and Italy and had held many conferences with the men who acted for those countries and for France. By the action of the foreign secretaries an understanding had been reached as to the procedure and the distribution of power in the Peace Conference. The result was seen in the easy way in which the conference divided itself into secret committees, each having charge of some vital phase of the proceedings, and the smooth way in which the decision was accepted by the delegates. Many bitter differences of will developed in the conference, but there was never a protest against the way its decisions were arrived at. It was not a parliamentary but a diplomatic body, and no one ever thought of disputing its procedure.

The following states were represented, arranged by the rules of the conference in the following categories: (1) Belligerent powers with general interests (the United States of America, the British Empire, France, Italy and Japan); (2) belligerent powers with particular interests (Belgium, Brazil, the British Dominions and India, China, Cuba, Greece, Guatemala, Haiti, Hedjaz, Honduras, Liberia, Nicaragua, Panama, Poland, Portugal, Rumania, Serbia, Siam and the Czecho-Slovak Republic); and (3) powers in a state of diplomatic rupture with the enemy powers (Bolivia, Ecuador, Peru and Uruguay). The attendance at the conference of neutral nations and nations in process of formation was recognized at sessions in which their special interests were considered. The powers in class 1 were allowed five delegates each; Belgium, Brazil and Serbia were allowed three each; China, Greece, Hedjaz, Poland, Portugal, Rumania, Siam and the Czecho-Slovak Republic were allowed two each; and Cuba, Guatemala, Haiti, Honduras, Liberia, Nicaragua and Panama, as well as the powers of class 3 were alloted one each. The British Dominions were represented as follows: From Australia, Canada, South Africa and India, two each, and from New Zealand one. Each delegation had the right to avail itself of the panel system. Each delegation was allowed to appear at the sessions with technical experts and stenographers, and the experts might speak to give information desired of them. The condition of representation of Russia was to be fixed by the conference when Russian matters came up. No general constitution of the Peace Conference has been announced, beyond such inevitable rules as referred to the numbers of delegates and the functions of the secretariat. By leaving the conference unrestricted its action could be most easily adjusted to the needs of the occasion. As it happened, however, the plenary sessions did little more than register the opinions of the committees.

The work of the conference was early divided into various parts with a commission to investigate and report for each. Thus there were commissions on the formation of a League of Nations, on fixing responsibility for the war, on determining the reparation for damages, on international labor legislation, on international control over ports, waterways and railroads, on economic drafting, and on economic co-operation among the Allies. But a much more important body than any of these commissions was the central commission of the Peace Conference, which seems to have grown up out of the sheer prominence of the five great powers. It was composed of President Wilson and Secretary of State Lansing, and of the prime ministers and foreign secretaries of the four other states of class 1. It was sometimes known as the Big Ten, and since each pair was dominated by one man, it eventually came to be the Big Five. Here was the centre of power of the Peace Conference. Account should be taken, also, of the Supreme War Council, which sat at Versailles during the second half of the war. Under the presidency of Marshal Foch it sat through the conference period with its eyes on the execution of the armistice and on similar affairs. But even this council did not resist the all-powerful Council of Ten, which superseded it at times or sat with and dominated it at others; but the Big Ten generally left the Supreme Allied Council to its own will in matters purely military.

Problems of the Peace Congress.—The first session was held in the Salle de la Paix at the Ministry of Foreign Affairs, Quai d'Orsay, Paris, 18 Jan. 1919, at 3 P.M. Impressive ceremonies marked the opening of the session. Soldiers saluted the arriving delegates, trumpets sounded shrill notes of honor, dignitaries escorted the delegates to their places around a great green table, and the President of the French Republic made a speech of welcome. Then President Wilson rose and nominated M. Clemenceau, the French premier, for president of the conference, and Mr. Lloyd George seconded the nomination, which was carried unanimously. In a short speech Clemenceau pointed out the chief business before the delegates. At the head of the program he placed the proposition for a League of Nations, and after that reparation, responsibility for the war, and the international relations of labor. He invited each nation to submit proposals in regard to each subject.

M. Clemenceau, however, did not allude to the crop of jealousies and local ambitions that were already springing up among the nations represented at the conference. An American editor who was in Paris thus put it: "The vanities, cupidities and pugnacities which masquerade as 'national aspirations' are seething beneath the serenity of the Quai d'Orsay." He added that the opportunism of politicians, the materialism of business classes and the militarism of the professional soldiers operated to make a sinister peace in which should appear all the selfish motives that had characterized the congresses of Vienna and Berlin in whose deliberations were sown the seeds of the World's War. Over against these tendencies, said the same journalist, were three forces that worked for a treaty in which were the elements of permanent peace, and these were: The world's revolt against war, the disgust of liberal-minded people in all nations at the theory of the Balance of Power, and President Wilson's determination to place the project for a League of Nations at the head of any treaty that was made. The diagnosis was correct. In its large relations the conference was a battle royal between the forces of international liberalism and those of selfish nationalism. President Wilson led the first and used freely in support of his cause the immense prestige which the

United States had at the time. The leaders of the other side were morally weak and did not dare fight openly for their views. They did not give them up specifically and did not defend them as principles; and before President Wilson's attacks they were mute. But they did not cease to contend for the specific ends they had in mind, and in the conference they were sometimes strong enough to force Mr. Wilson to a compromise that gave the lie to the Fourteen Points, which they had accepted. It must not be thought that the situation here indicated was solely due to the leaders of the European states. It was as frequently due to the states of mind of the people. There was scarcely a statesman who stood out for a narrow national policy at Paris who did not know it would be politically foolish for him to do otherwise. The peoples of Europe had suffered a great deal and looked for some easing of their burdens at the expense of the defeated, or they had acquired definite convictions that their "national aspirations" were justified, and it would have been ill for a political leader or party that opposed them.

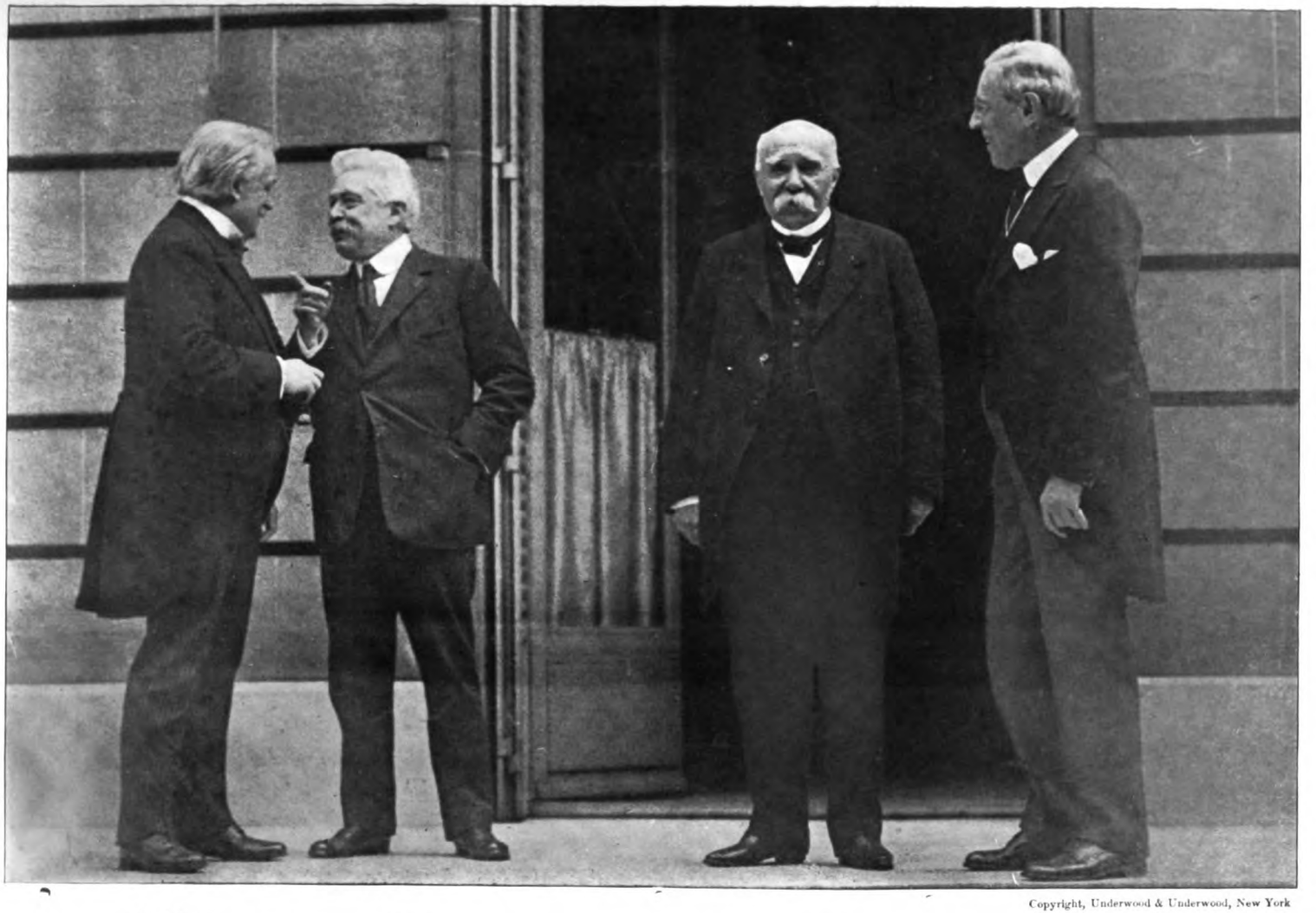
In this situation the United States and their President were to play a large part. The position of the one among the nations at the conference and of the other as a champion of international justice were chiefly responsible for this peculiar eminence. So deeply were the doubts and suspicions of European states rooted in past diplomatic history that no European nation at Paris trusted the other European nations to deal fairly. But they all trusted the United States, at first, because it had never become allied with the intrigues of Europe. When they learned the United States would not take up their quarrels, most of their confidence turned into scorn.

President Wilson went to the Peace Conference as no other man went there. Received in Europe as a herald of a new world, he had for the moment the plaudits of a suffering continent, who looked to him for whatever they thought it needed in its sorrow. He had given the peoples of the belligerent countries a good ideal to fight for when he announced that the war was a war for democracy. The cry heartened the Allies and undermined the authority of the kaisers of Germany and Austria-Hungary. His suggestion of a League of Nations as a means of reducing future wars to restricted circles made a strong appeal to a world sick of battle horrors. He who had given peoples the hope that an ideal that men had dreamed of since the days of Henry of Navarre might now become a reality was certain to have a devoted following among men who wished well for the future. More than all else, he was in a peculiarly favorable position for taking a great part in the conference. He led the greatest, richest and least damaged nation by the war that was represented at the conference. Every other nation hoped to get aid from this nation in the era of reconstruction, and in the fawning spirit of the diplomacy of 1815 they dared not offend its President. Moreover, President Wilson had taken the earliest stages of the peace negotiation into his hands when he acted as intermediary to arrange the terms under which the Germans appealed for peace. His Fourteen Points had been accepted by both groups of Allies as the basis of peace. Although they were to be sadly distorted by his friends, the assumption when the conference met was that they would be the basis of all deliberations, and who could better guide such discussion and stimulate it than he who wrote them? Thus his personal influence in Europe, the weight he acquired from the position in which his country found itself, and his leadership in the ideals that seemed about to be made the foundation of the treaty all pointed to the high leadership of President Wilson at the Conference of Versailles in 1919.

Although the mass of business that seemed likely to come up had been parceled out among the eight commissions named, it soon became evident that nothing important was to be done that did not go through the hands of the Council of Ten. Here was the chief power, and here was the chief action. The Big Ten, in fact, decided every important matter before it went to the conference. After a while the habit was established of dropping the foreign secretaries from the meetings, so that the council now became the Big Five. It is said that the reason the body was so reduced was that in its first form the secret business of the sessions seeped out to the French and British press to such an extent that it was thought well to debate the most important affairs in the smallest possible circle. From that time the meetings were generally in President Wilson's private rooms, and as the Japanese representative rarely attended the body became the Big Four.

The League of Nations.—The first business brought forward was the proposed League of Nations. It was, in fact, the most important thing suggested in the conference; for if such a league could be founded and made to work it would transform the political constitution of the world. If it could not be made to work it was a thing that should not be attempted. President Wilson went to Paris determined to carry it through the conference, if possible. In every European country were some persons of influence who believed it could be made to work, if adopted. But a larger portion of the men of political ideas looked on the suggestion with some of that good-humored tolerance with which Metternich received the tsar's suggested Holy Alliance. To overcome this lukewarmness was Mr. Wilson's task. Each statesman had some demand to make on the conference, and Wilson's demand was the adoption of the League of Nations. In the final balancing of demands there was a disposition to make the President pay for his favorite idea by forcing him to give up something in favor of each of the other demands.

President Wilson was chairman of the commission to which was entrusted the task of preparing a covenant of the League of Nations and submitted a plan which had the approval of the American delegates. Another plan was submitted by General Smuts, of South Africa, and other suggestions were received. After much debate by the commission a tentative covenant was reported to the conference in plenary session on 14 Feb. 1919, and by it made public. It was given out with the hope that the criticism made would give its authors an opportunity to determine in what respects it would have to be amended before it was finally accepted. No strong demand for amendment was heard in any nation except the



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Lloyd George Orlando Clemenceau Wilson

The Council of Four

United States, where a group of Republican senators issued a statement that the covenant would have to be amended before they would accept it. They did not specify the exact terms in which the document ought to be modified.

During the long period in which the idea of a league to promote peace had been discussed before 1919 in various societies in the world the suggestions fell in two groups. One series implied the creation of a common organization with no other power than public opinion to enforce its decisions. Such a league was analogous to the Hague Conferences which did not succeed in arousing much respect before 1914. The other group favored the creation of a league with a central power strong enough to make and enforce international law. When President Wilson went to Paris many persons who desired a league in some form feared that the first type would be all that he could get adopted. Before the discussions at Paris ceased the opinion in the conference shifted in such a way that those who voted at all favored a league strong enough to execute its laws and pledged to enforce them in some important respects. The covenant as finally announced leaned more to the second than to the first type of a league.

The main features of the covenant as finally incorporated in the treaty were as follows: A bicameral government was provided with a "body of delegates" composed of one member from each constituent state but with very little real power; and an executive council of nine members, one from each of the five large states and four chosen, one each from the small states in rotation. This council was to have the right to recommend the quota of military and naval forces each state contributed in carrying out the purposes of the league, and it could fix the armaments and numbers of the troops of each state in the league. There was to be a court of arbitration, a permanent secretariat and a stated place of meeting, and the states pledged themselves not to go to war without first submitting their disputes to arbitration or to the judgment of the executive council. To disregard this pledge was to commit an act of war against all the other states of the league and they could take economic or other steps to make the offending state obey the covenant. Each signatory state was to guarantee the territorial and political integrity of the other states against external aggression (Article X); a state could be admitted to the league with the approval of two-thirds of the states already in it; colonies taken from a mother state were to become mandatories of the league under the tutelage of states designated by the league; treaties to be valid must be registered with the league; and amendments to the covenant were to be effective when accepted by all the states represented in the executive council and by three-fourths of the powers represented in the body of delegates.

This remarkable document was received with equanimity by most of the states of Europe. By accepting it they pledged themselves to the erection of a super-state with certain powers in limitation of their freedom of action, and they entered into the arrangement without visible hesitation. The explanation seems to be that the war had brought them to such a state of prostration that they did not believe it possible to go on without some such a league to guarantee their safety while they were recovering from existing misfortunes. A league would enable them to reduce armaments, allay the fears of conquest by their ancient enemies, and give them the feeling that their possessions were secure. To the United States, however, the situation seemed otherwise. The country had suffered comparatively little through war, and its people were so confident of the future that they felt no need of the guarantee of other states to enable them to live in security. There was, also, some feeling that the other nations were asking too much of the United States, the one power that had great wealth and undiminished productive capacity. Over against this view was the opinion that the country ought to throw in its lot with the states of Europe for better or worse, partly because it was the generous thing to do and partly because by doing so it could use its influence in preventing wars which, if they started, would probably involve the United States themselves. The contention that now arose brought up clearly the question of joining or not joining the world movement in behalf of the control of war. The controversy that came up in the Senate of the United States over this question has little relation to this discussion. It was waged chiefly over Article X of the covenant, by which each state guaranteed the integrity of the other states against external aggression. Many Americans did not wish their government to assume such a burden. The compromises eventually made on this and other points took form in the "reservation" of certain rights and privileges to the United States, as the interpretation of the Monroe Doctrine, and the actual calling out of the army by Congress; but it does not yet appear what strength the "reservations" when adopted will have in actual use. At the present time the whole subject is unsettled.

The readiness with which the European states at the conference accepted the League of Nations was partly due to the fact that each of them had its own demands on the conference and was inclined to play them off against the league project with President Wilson. Great Britain, France, Japan and Italy, to say nothing of the smaller states, as Belgium, Poland, Jugoslavia and Czecho-Slovakia, all had their eyes on some advantage that the conference could give. This mass of questions made up the problem of European readjustment. At first it was thought that the European delegates would settle them among themselves, the delegates from the United States giving themselves to the league and such an academic question as the responsibility for the war. But President Wilson soon showed that he thought otherwise. The meeting was not a two-sided thing, in which the affairs of one continent had nothing to do with the people of the other. The Fourteen Points had definite relations with all the matters connected with readjustments, and President Wilson was their champion. Thus it came about that he took a leading part in settling every point that was before the delegates. It was a new experience for the government of the United States to take such a strong hand in world affairs.

Disposal of the German Colonies.— The first matter of this kind to come up was the

disposition of the German colonies. Late in January it became known that informal plans had been made by which several of the British colonies would annex some of the German colonies, that Japan, France, Italy and possibly Belgium had hopes of taking certain others. Against these plans President Wilson protested vigorously. In a long discussion, the prime ministers of the principal British colonies stood together, with the support of the foreign minister of France, Mr. Hughes, of Australia, being especially vehement. At last Mr. Lloyd George called the colonial prime ministers into a consultation and persuaded them to be satisfied with the mandatory system, for which President Wilson contended. This system was to be administered under the supervision of the League of Nations, and it was in line with the fifth of the Fourteen Points, accepted in the preceding autumn by all of the states whose delegates now favored direct annexation of the colonies. The system was made to apply to dismembered portions of the Turkish Empire as well as to the colonies of Germany.

Attempt to Side-track the League.— President Wilson's insistence on the creation of the mandatory system was considered one of the crises of the conference. Another was the attempt of the leaders to side-track the League of Nations during his absence in the United States, between 15 Feb. and 14 March 1919. They seem to have won the consent of Colonel House, who met the President at Brest on his return with a written statement of a plan to separate the league from the treaty, although on 25 January a specific vote of the conference had made it an integral part of that document then in the making. The plan was embodied in a "resolution, fathered by Mr. Balfour," providing for a general settlement of all points and saying nothing about the league. Newspapers and statesmen of the conservative school, who opposed the league, declared that it was a dead project; for it was evident that it would amount to nothing if deferred until the passions of the individual states had an opportunity to rise over the inevitable disappointments at the other features of the treaty. President Wilson felt that he had been deceived and caused his news agency to announce that the vote of 25 January was "of final force" and that reports of contemplated changes were untrue. The news was greeted with derision in many quarters. The world wanted peace and it said that Wilson stood in the way. But the United States was necessary to the world at that time, and it was not to be denied that its demands were unselfish. When, therefore, the other statesmen realized that the President would oppose any aid to Europe if there was an attempt to go on under the old system of concert, they yielded and agreed to abide by the vote of 25 January. They were yet to wring important concessions from him in return for this agreement. This crisis past, the conference proceeded to consider other matters equally perilous.

The Saar Valley and the Rhine Region. — One of these matters was the settlement of the claims of the Allied states as to territories and reparation. By this time the Council of Ten had shrunken to the Big Four — Wilson, Lloyd George, Clemenceau and Orlando. Great Britain and France had suffered heavily at the hands of Germany and their people demanded heavy reparation. The prime minister of each nation was forced to promise to collect damages to the uttermost. President Wilson stood by the spirit of the Fourteen Points that "there shall be no annexations, no contributions, no punitive damages." He demanded that the amount to be paid by Germany should be mentioned in the treaty. His associates objected, because they realized that any amount that Germany could pay or that Wilson would accept under the Fourteen Points would be so limited that public wrath in their respective countries would overwhelm them.

At the same time territorial claims were pressing for attention. France had definite claims to the Saar coal fields and her military men, headed by General Foch, wished to have a long period of military control of the entire west bank of the Rhine. By the short-lived treaty of 30 May 1814, the Saar Valley went to France, but it was awarded to Prussia on 20 Nov. 1815. France now demanded its "restoration" by annexation. She has little coal but an abundance of iron and believed that she needed this rich fuel deposit to promote her industrial development. Her demands found some moral support in the heavy and wanton damage the Germans did to the Lens coal mines during the period of occupation. But the Saar Valley is German through and through by race and feeling, and President Wilson felt that to hand it over to France would violate that part of the Fourteen Points which declared that "peoples are not to be handed about from one sovereignty to another by an international conference," and he opposed the demand. He thus antagonized the French people in two respects and aroused their strong hostility. To his own friends it seemed that he but stood out for the principle of a just peace which would not plant the seed of future wars.

Other peoples had their claims to present, and they all took them straight to the President, who, it was known, occupied a central position in the negotiations. This was not so much because he had more power than Lloyd George and Clemenceau, but because those statesmen, representing the old diplomacy, were, in general, willing to make deals sharing the gains for their own countries, as in the olden times. But they had to get the consent of the American President, and they found it hard to obtain. Not only was this true of Italy, who wished to get Fiume and cut off Jugoslavia from the Adriatic, but there were many small states, as Greece, Poland, Rumania and Czecho-Slovakia who asked his interest in their special claims. It was generally impossible to support them in their extremity, and by refusing the President added to the stream of criticism. There were, also, groups of peoples aspiring to nationality, as the Egyptians and the Irish, who laid their claims before him. If he had seriously taken up their causes he would have broken up the conference; but by refusing to play politics with them he aroused their deep resentment. It seemed that his opponents took some satisfaction in seeing this mass of criticism grow, expecting that it would eventually so weaken his influence at Paris that he would no longer be an obstacle to their wishes. Against this menace President Wilson played a vigorous stroke. On 7 April, when his opponents were momentarily expecting him to yield, came the anounce-

ment that he had ordered the ship *George Washington,* then at Brooklyn, to be sent to Brest at once. It was tantamount to saying that he was going to withdraw from the conference if the combinations against him continued to operate. But Clemenceau was too wise to allow such a thing to happen and next day the Paris *Temps,* by official inspiration, gave it as its opinion that the French government would not demand annexation of the Saar Valley. Other papers taking their cue modified their criticism of the President.

When the treaty was finally published it was seen that the Saar coal fields went to France in fee simple, as reparation for the damages at Lens; but it was provided that the political administration of the valley should be left to the League of Nations and that a plebiscite at the end of 15 years should settle its ultimate political control. As for the demand that France should have military control over the west bank of the Rhine, the treaty made the entire west bank and a strip 50 kilometers wide on the east bank a demilitarized area under German control. Fortresses must not exist in it, nor manœuvres be held there, nor any other military steps taken. Thus were met France's contention that her border was exposed; but it was a settlement full of menace.

The Demand for Fiume.— The fourth crisis was the Italian dispute. Italy entered the war to obtain *Italia Irredenta,* unredeemed Italy, that is, lands inhabited by Italians but held by Austria. When she threw in her sword in May 1915, she had taken the precaution to obtain the approval of her claims in the agreement known as the Pact of London. In this document she did not claim Fiume but agreed that it should go to Croatia, which in 1919 was a part of Jugoslavia. The city was the port of commerce for Jugoslavia and Hungary and had long been so considered; and that was the reason it was left to Croatia in 1915. Soon after the armistice was signed 11 Nov. 1918, a movement arose in Italy for obtaining Fiume for Italy. Before the war, according to statistics then accepted the Italian residents were a plurality but not a majority of its population. But agitators in Italy made it appear to the people that one of the jewels of the Italian crown was about to be handed over to foreigners, and the excitable people became aroused on the question. Probably Orlando, the prime minister, would have resisted the demand if he had felt able to defy popular opinion; but he had many enemies in politics and was in no position to act independently. He arrived in Paris pledged to demand Fiume and let it be known at once. Now neither Great Britain nor France looked favorably on Italy's pretension to become a great colonial power. They were not willing to take the lead in opposing her, but they encouraged President Wilson to take such a position. The Italians were willing to do anything requested of them if they could have Fiume. Since they could get no intimation that they were to get the city they sought to block progress, threatening to go home, ordering their trains, and forever repeating their arguments. At last President Wilson prepared a statement of the case against their claim, read it over to Lloyd George and Clemenceau, who did not object to it, and finally gave it to the newspapers. So much had been said about the secrecy of the negotiation and the wholesome effects of publicity that President Wilson may have thought that a frank avowal of the matter would clear it up. His statement was generally approved outside of Italy. In that country passion rose to white heat. Orlando left Paris and was received with enthusiasm in Rome. The Italians seem to have thought that their departure would break up the conference. When they saw that the treaty with Germany was about to be presented without them, they suddenly announced their return. When signs appeared that the Italian wave of passion was beginning to recede the poet, d'Annunzio with a band of followers appeared in Fiume, selected his grave, and announced that he would die in the city before it should pass into the hands of the Jugoslavs. President Wilson was supported by Great Britain and France. He let it be known that he would agree that Fiume might be left under international control, but Italy would have nothing but an Italian Fiume.

The Japanese Demands.— The fifth crisis occurred over the demands of the Japanese in Shantung. The position of Japan in Asia is different from Italy's in Europe. Over against her lie the rich lands of Russia, China, with colonial possessions of Great Britain and France. Little wasted by the war she is in a position to do great damage in Asia for the time being, if she feels that it is worth while to incur the hostility of her former friends. When, therefore, she asked Great Britain in February 1917, to agree that she should succeed to Germany's rights at Kiao-chau and in Shantung Peninsula she obtained a ready assent, and she was able to get France, Italy and Russia to make the same promise. In February 1917, Japan must have believed that the United States would enter the war. She doubtless believed, also, that they would take the side of China, who asked for the restoration of Shantung. By prudently getting the previous assent to her scheme of three great powers, she tied the hands of the United States in the peace congress. When it is asked why President Wilson did not treat Japan as he treated Italy it is sufficient to point out that he had Great Britain and France behind him on the Fiume incident, and that they, with Italy, were pledged against him on the Shantung incident. He got, however, a promise from Japan that she would eventually hand over Shantung to China in sovereignty, but she would not make the promise in writing, saying that her word was given and that to demand a written statement was to doubt her honor. It was not possible to assert that she was deceiving her associates; but it was unusual for a power that took written assurances from others as a basis of all treaties to refuse to give the same when she was binding herself.

The situation was serious for President Wilson. Without the support of the other powers, with the Italian delegates in Rome in threatened permanent retirement, it seemed to him necessary to make a compromise. Thus it was agreed in the treaty (sections 156, 157 and 158) that Japan should have all the rights that Germany had possessed at Kiao-chau and in the Shantung province. Germany, it should be remembered, held Kiao-chau under a 99 years lease, and Japan could not expect to hold it longer, nor more absolutely. At the same time

Japan made an oral supplementary agreement, on the surface voluntary, «to hand back the Shantung Peninsula in full sovereignty to China, retaining only the economic privileges granted to Germany and the right to establish a settlement under the usual conditions at Tsingtao.» China protested against this settlement and eventually refused to sign the treaty. To have done otherwise would have been to accept the signing away of rights she was compelled to defend as long as she could.

No other part of the peace treaty was so much criticized in the United States as the Shantung settlement. The opposition arose from a deep-seated suspicion of Japan's integrity in diplomacy; and it was freely predicted that if Japan did hand back Shantung to China she would find a way to retain vital control under the guise of economic privileges. But the economic privileges she has talked about whenever the subject has been discussed are such as other nations have obtained in China, and elsewhere, in establishing spheres of commercial influence. A feature of the problem not generally taken into account is the supineness of China. No nation of 400,000,000 persons has a right to be as weak as she and expect the rest of the world to defend her against the greed of a neighbor. It is hers to defend herself, and it may happen that the Shantung matter will serve to awaken the Chinese to the necessity of protecting their nation. If Japan's policy results in the rise of nationality in China, the situation will take care of itself. If Japan breaks her promises and China challenges her it will be for the other powers, or the League of Nations, to say that she shall not wage war to make good her broken faith.

In some circles it has been claimed that President Wilson had trouble at the Peace Conference because he tried to get the League of Nations adopted. That is an error. He had little trouble in getting it adopted. It was in trying to carry out the principles in his Fourteen Points, accepted formally by all the powers at war with Germany, that he got into difficulties. If he had been willing to ignore these principles, make a settlement on the basis of the division of the spoils, with the league established to see that the agreements was carried out, he would have had pleasant sailing at Paris. But such a peace would not have had the respect of posterity, nor would the defeated nations have accepted it in good faith. It would have sown seeds of future wars.

Boundaries of Small States.— The adjustments here described, the disposition of the German colonies, the arrangement with regard to reparations, the Saar Valley, and the demilitarized region along the Rhine, and the recognition of Japan's claims to succeed Germany in China, along with the creation of the League of Nations are the achievements of the conference which aroused most feeling. But other adjustments were made, some of them both important and difficult. Of this class one problem was the determination of the boundaries of the new small nations. In reconstituting the Polish state the question of a Polish port came up. Danzig is the natural outlet for Polish trade and it was once a Polish city. There was a demand among the Poles for its cession to the new state. But it was situated in the strongly German province of East Prussia and it was not wise to assign it to Polish rule. It was finally decided that Danzig should be internationalized and that a «corridor» communicating with it from Poland should also be internationalized. The decision caused great disappointment to the Poles, but it satisfied most other people. The boundary was so drawn that the Polish kingdom as it existed before the partition of 1772 was re-established territorially. Within its boundaries lies Upper Silesia rich in coal and iron, whose population is strongly German. To determine the fate of this province it was decided that a plebiscite must be taken in not less than 18 months after the ratification of the treaty to determine whether the province goes to Poland or Germany. East Prussia, lying east of the Vistula, for the most part was left to Germany, since its population is decidedly German. It was also provided that the province of Schleswig should be divided into two districts, each of which should by vote determine whether it should belong to Germany or to Denmark. Finally, the fortifications of Heligoland were ordered destroyed and by German labor under Allied supervision.

Limitations on German Military Power.— The provisions by which Germany's power to wage war was to be reduced within the safety limits were devised with great care. After 31 March 1920, the army was not to contain more than seven divisions of infantry and three divisions of cavalry, a total of not more than 100,000 men, of whom not more than 4,000 should be officers, and the force was to confine itself strictly to the preservation of internal order. The number of guns that might be kept was specified, and the rest were to be handed over to the Allies. For each gun of 10.5 cm. or less calibre not more than 1,500 rounds of ammunition could be kept, and for larger guns not more than 500 rounds each. All surplus stocks of arms and ammunition were to be surrendered, all munitions factories to be closed and only enough maintained to supply the small army now allowed to exist. There was to be no more importation nor exportation of munitions of any kind. Universal military service was to be abolished by law, and the army in the future was to depend on voluntary enlistment. The period of enlistment was to be 12 years for officers and privates, and not more than 5 per cent of either class to be discharged in one year. Only one military school was to exist for each arm of the service; and the universities and other educational institutions «must not occupy themselves with any military matters.» No «measures of mobilization» were to be taken.

The naval forces in commission were not to exceed 6 battleships of the *Deutschland* or *Lothringen* type, 6 light cruisers, 12 destroyers, 12 torpedo boats, or any equal number constructed to replace them as provided elsewhere in the treaty. The personnel of the navy, including the reserve corps, coast defenses, signal stations, and other land forces of the navy, must not exceed 15,000 men, and there must not be more than 1,500 officers and warrant officers. All surface warships above the number specified were to be surrendered, or considered surrendered if they were already in Allied hands; but 28 auxiliary ships, among them the *Möwe*, were to be retained and converted into merchant vessels. All submarines,

with submarine docks and submarine salvage vessels, were to be surrendered or broken up under the supervision of the Allied powers, and the resultant material could only be used for industrial purposes. In replacing the ships herein allowed to Germany armored ships were not to be larger than 10,000, light cruisers 6,000, destroyers 800, and torpedo boats 200 tons each; and no submarine was to be constructed or purchased in the future. Strict provisions were adopted to limit the number of officers and men, who were to be obtained by voluntary enlistment for long periods of service, as in the army. Germany was forbidden to maintain fortifications on her own coast between 54° and 55° 27′ north latitude, and 9° and 16° longitude east of Greenwich. She was also forbidden to keep any military or naval air forces or aircrafts of any kind, and all such machines, except 100 seaplanes which were to be retained for locating submarine mines until 1 Oct. 1919, were to be surrendered.

To see that Germany did not find the means of evading these severe military and naval terms provision was made for an Inter-Allied Commission of Control appointed by the Principal Allied and Associated Powers which might take up its residence at Berlin, or elsewhere in Germany, if it saw fit, with full powers of inspection of documents, plants, and other things within its discretion, and the expenses of maintaining the Commission were to be borne by Germany. She was required, also, to give every facility for making such investigations as the League of Nations demanded.

The Punishment of Germans.—As the war drew near its close Allied opinion began to cry out for the punishment of the German kaiser and the officers who were responsible for the looting and other harsh measures committed by the Germans in violation of the accepted usages of war. It was not clear that these persons could be punished under any generally accepted rules; but once the feeling was abroad it was not wise to ignore it. The victims of the war were not likely to collect out of Germany half reparation for their property damages, to say nothing of the losses of life; and they were in a frame of mind to demand, as the least that could be done, the full punishment of those who precipitated their sorrows. It was in view of this feeling that the treaty-makers arranged for trials of persons they must have known they would have much difficulty in getting their hands on. "The Allied and Associated Powers," said article 227, "publicly arraign William II of Hohenzollern, formerly German Emperor, for a supreme offense against international morality and the sanctity of treaties" and it provided for a special tribunal to try him and promised to ask Holland to surrender him that he might be given a fair trial. Succeeding articles pledged Germany to hand over for trial by military courts persons accused of "having committed acts in violation of the laws and customs of war."

Reparations.— The reparation sections provided that Germany assume full responsibility for the damages suffered by the Allied governments and people on account of the war. It was admitted, however, that Germany's resources were not sufficient for full reparation. She pledged herself to compensate the civilian population for the losses she had inflicted upon them, and in addition to repay to Belgium the sums that government had been forced to borrow during the war. The amount of damages was to be determined by a Reparation Commission, which must report the assessed damages to Germany by 1 May 1921 and draw up a schedule of payments by which the debt was to be discharged within 30 years from that time, unless the Commission agreed to extend the time for any deficit. Germany also agreed to hand over in gold by 1 May 1921 the sum of 20,000,000,000 marks or its equivalent out of which the expenses of maintaining the Allied army in Germany should first be met, the balance going to the reparation fund. This fund was to be divided among the Allied powers in the proportion already agreed upon among themselves. Germany also promised, in addition to the above reparations, to restore all cash and securities taken away and all animals driven off, when they could be identified. The German government undertook to furnish the Reparation Commission all possible facilities in arriving at just decisions and to pay its expenses. The constitution and powers of the Commission were carefully regulated with an eye to the equal distribution of powers as between the states concerned. In anticipation of the reparation payments Germany was to issue: (1) bonds for 20,000,000,000 marks payable without interest on or before 1 May 1921, an offset against the specific payment of an equal sum already mentioned; (2) bonds for 40,000,000,000 marks with interest at 2½ per cent between 1921 and 1926 and at 5 per cent thereafter; and (3) bonds with interest at 5 per cent for an additional 40.000,000,000 marks if the Commission thought Germany could pay them. Thus money payments might be arranged to a total amount of 100,000,000,000 marks in gold.

The bill presented for submarine damages during the war was exceedingly steep. Recognizing that Germany could not replace all the sunken vessels, she was required to hand over all the merchant ships under her flag of 1,600 tons or more, half of those between 1,600 and 1,000 tons, and one-fourth of her trawlers and fishing boats. She was to build for the Allied powers, at a price per ton to be agreed upon by the Reparation Commission, ships to the total tonnage of not more than 200,000 tons a year for five years, these ships to be accounted for in the reparation payments. She was also to hand over any boats for inland navigation acquired by her or by her people during the war, and to surrender ships of her river fleet equal to the losses of river craft by the Allies, provided she did not give up more than 20 per cent of her river fleet as it existed 11 Nov. 1918.

Germany was to give up, the values to be credited on her reparation account, various kinds of property, as certain submarine cables, specified quantities of coal for Italy and benzol and other chemicals for France, and dyestuffs, if they were demanded. She was forced to accept a large number of restrictions on her financial and economic actions, all looking to the execution of the other obligations in the treaty. She also agreed to restore to the University of Louvain books and manuscripts equal in number and value to those destroyed by the Germans in the burning of Louvain; and various other works of artistic or historical interest

taken by Germany from Belgium or France in the past were to be restored, particularly the French flags taken in the Franco-Prussian war. The Kiel Canal was opened free to the vessels of commerce and war of all nations. The Elbe, Oder, Nieman, and the Danube from Ulm were declared international rivers, and arrangements were made for the creation of international commissions to supervise traffic upon them.

International Labor.—Finally, for the establishment of uniform conditions of labor, the treaty authorized the creation of a General Conference of Labor and an International Labor Office to gather and distribute information concerning labor. The Conference was to meet at least once a year. Each nation that belongs to the League of Nations was to send to the Conference two delegates appointed by the government besides one representing labor and one representing capital. The organization was given little power other than that which looked to the creation of public opinion, and its organization and annual meeting seem to make it somewhat top-heavy; but it is admittedly a powerful step toward the internationalization of the conditions under which labor operates.

The Treaty Signed.—The treaty was delivered to the German delegates in Versailles 7 May 1919, the fourth anniversary of the sinking of the *Lusitania*. Its publication in Germany was a black event for her proud people, who had been bred to think themselves invincible. It took much careful work to keep down an explosion which would sweep the new republican government into ruins. After many protestations that they would never sign, the representatives at last submitted to dire necessity. The new German Parliament approved the treaty, while declaring the country was not able to pay the sums exacted, and sent to Paris delegates who were willing to sign it. The last ceremony was performed 28 June 1919, in the Hall of Mirrors of the palace at Versailles, the apartment in which the German Empire was proclaimed in 1871. On 10 Jan. 1920 treaty ratifications were exchanged by Great Britian, France and Italy, but in the United States Senate attempts were made to modify the league covenant with an eye to weakening the obligations the league would impose upon the United States.

The Treaties with Austria and Bulgaria.—The treaty accepted by Germany furnished the model for the treaties with Austria and Bulgaria. The former was submitted to the Austrian delegates on 2 June 1919 at the old royal castle of Saint Germain-en-Laye, in modern times a museum 13 miles from Paris. It was accepted and signed by the Austrian representatives on 12 Sept. 1919. In the beginning Austria acknowledged responsibility for the war. Terms of reparation were accepted similar to those imposed upon Germany, to be executed under the supervision of the same Reparation Commission. Loot, especially artistic and historical objects, was to be surrendered. The separation of Austria from Hungary was recognized, as well as the creation of the states known as Czecho-Slovakia and Jugoslavia Austria thus gave up her claims to Bohemia, Moravia, and Austrian Poland. In the south she surrendered the Trentino, the Tyrol, Istria, and a part of Dalmatia, which with most of the islands in the Adriatic went to Italy. She also gave up Carniola, Croatia, Bosnia, Herzegovina, and the other part of Dalmatia, which went to the new Jugoslavic states. The disputed port of Fiume was in the region allotted to the Jugoslavs, but its disposition was not mentioned specifically. A further feature was to require Austria to accord equal civil rights to all her inhabitants without regard to race or religion, and she was forbidden to become a part of the German Empire. Her army was to be reduced to 30,000, and mobilization and compulsory military service were forbidden. The supplies of munitions were strictly limited and the manufacture of arms was limited to one factory controlled by the state. The navy was not to exceed three patrol boats on the Danube and no military or naval aircraft were to be maintained. Persons accused of violating the laws and usages of war were to be surrendered for trial.

Bulgaria was supposed to have obtained milder terms than her accomplices because she was the first power that submitted. She agreed to pay 2,250,000,000 French francs within a period of 37 years, to reduce her army to 20,000 men and her gendarmerie to 10,000, to surrender her surplus war material, all her warships and all her military aircraft, to recognize the Jugoslavic states, to compensate them for stolen coal by delivering 50,000 tons in five years, and to renounce the treaty of Brest-Litovsk. She was also to cede certain small strips of territory to Serbia to rectify boundaries, the most important being the triangle at Strumitza. The most perplexing matter in connection with the treaty referred to the disposition of Western Thrace. After much debate it was finally decided that Bulgaria was to hand it over to the Allied powers to be disposed of later as they saw fit, but with the provision that Bulgaria's right of free access to the sea should not be denied. The treaty was handed to the Bulgarian delegates 19 Sept. 1919. It was not until 15 November that the Bulgarians notified the Conference that it was accepted. In making this treaty the delegates from the United States were asked to sit with the delegates from the Allied powers. The United States accepted the invitation, as looking to the future. They had not been at war with Bulgaria.

Bibliography.—The treaties of peace with Germany and Austria have been issued by the United States government in separate form. The former was published in full in several newspapers in July 1919. Official summaries of each and of the Bulgarian treaty were also published in most of the large dailies. The treaty with Germany is published in a handy form by the American Association for International Conciliation, No. 142 (New York, September 1919). It is also issued as a supplement by *The American Journal of International Law*, XIII, No. 3, July 1919 (New York, Oxford Press), with a good analytical table of contents. In the same periodical for April 1919, Mr. George A. Finch presents an article "The Peace Conference at Paris," a description of the transactions in the plenary sessions including that of 14 Feb. 1919. Similar matter is found in No. 139 of the publications of the American Association for International Conciliation (New York, June 1919). Much has appeared in the newspapers on the conflicts

that arose in the Conference, most of it colored, no doubt, by the personal views of the editor, reporter, or the person communicating the information. The only prominent actor in the affairs of the Conference who has appeared before the public is Mr. Ray Stannard Baker, whose small book, 'What Wilson did at Paris' (Garden City 1919) is a clear and well-intentioned description of the main controversies before the Conference. The author was in charge of the American Press Bureau at Paris, and saw President Wilson every day. His book is strongly for Wilson but it seems to be fair and its main positions are not attacked by those who find fault with the temper of it. In Bassett, John S., 'Our War with Germany' (New York 1919) may be found a chapter on the Peace Conference, based by admission on the newspaper reports of the day.

JOHN SPENCER BASSETT,
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18. THE PEACE TREATIES. On 7 May 1919 the Treaty of Versailles was handed to Count von Brockdorff-Rantzau, the chief of the German plenipotentiaries. During the weeks of negotiation that followed many minor changes were made in the treaty terms and the Polish section was entirely rewritten. The complete and final text of the treaty as signed by the peace plenipotentiaries of Germany and of 26 Allied and Associated Powers on 28 June 1919 is given below. This text has been set from one of the printed copies issued by the Peace Conference. The copy which the plenipotentiaries signed was bound in morocco, sealed and deposited in the archives of the French Republic at Paris. A few exceptions must be noted among the delegates named in the preamble. China's delegates refused to sign because of the Shantung award by the Peace Conference to Japan, while the Orlando ministry was overthrown during the deliberations of the Conference and Italy's signers were led by the Foreign Minister of the new cabinet, Tittoni. On the German side, the Brockdorff delegation withdrew and Dr. Hermann Müller and Dr. Johannes Bell signed for Germany.

The Treaty of Versailles could not become effective until at least three of the principal Allied and Associated Powers had ratified it in addition to Germany. Great Britain ratified the treaty 31 July 1919 and Belgium followed on 8 August. Belgium, however, was not one of «the Principal Allied and Associated Powers.» France ratified the treaty 13 Oct. 1919 and the king of Italy signed a Decree of Ratification 7 Oct. 1919. The treaty went into immediate effect in France and was followed by the removal of all war restrictions in that country and in Algeria. Canada ratified the treaty 14 September, and China, although unable to ratify because of her refusal to sign at Versailles, declared her adherence formally on 24 Sept. 1919, to all the treaty provisions except those concerning Shantung, and declared the state of war with Germany at an end. New Zealand ratified the treaty 2 Sept. 1919; the Union of South Africa 12 September and Australia on 2 Oct. 1919. Japan ratified the treaty 30 Oct. 1919 and Czechoslovakia ratified both the German and Austrian treaties 7 Nov. 1919.

On 10 July 1919 President Wilson laid the Treaty of Versailles before the Senate of the United States. Four months of bitter debate ensued, during which the Republican majority, led by Senator Lodge of Massachusetts, strove to amend or modify the treaty and the Democratic minority tried to have it ratified intact. All amendments were defeated and a real battle developed over the adoption of 14 qualifying reservations reported by the Foreign Relations Committee on 7 Nov. 1919. The first test of strength came on the preamble, which required the written assent of three of the Allies to the American reservations. This preamble was adopted by a vote of 48 to 40 . On 10 Nov. 1919 began the debate on the principal reservation — that regarding Article X of the treaty. The ratifying resolution offered by Senator Lodge was as follows:

Resolved (two-thirds of the senators present concurring therein), That the Senate advise and consent to the ratification of the Treaty of Peace with Germany concluded at Versailles on the 28th day of June, 1919, subject to the following reservations and understandings, which are hereby made a part and condition of this resolution of ratification, which ratification is not to take effect or bind the United States until the said reservations and understandings adopted by the Senate have been accepted by an exchange of notes as a part and a condition of this resolution of ratification by at least three of the four principal allied and associated powers, to wit, Great Britain, France, Italy and Japan:

1. The United States so understands and construes Article I that in case of notice of withdrawal from the League of Nations, as provided in said article, the United States shall be the sole judge as to whether all its international obligations and all its obligations under the said covenant have been fulfilled, and notice of withdrawal by the United States may be given by a concurrent resolution of the Congress of the United States.

2. The United States assumes no obligation to preserve the territorial integrity or political independence of any other country or to interfere in controversies between nations — whether members of the League or not — under the provisions of Article X, or to employ the military or naval forces of the United States under any article of the treaty for any purpose, unless in any particular case the Congress, which, under the Constitution, has the sole power to declare war or authorize the employment of the military or naval forces of the United States, shall by act or joint resolution so provide.

3. No mandate shall be accepted by the United States under Article XXII., Part I., or any other provision of the treaty of peace with Germany, except by action of the Congress of the United States.

4. The United States reserves to itself exclusively the right to decide what questions are within its domestic jurisdiction and declares that all domestic and political questions relating wholly or in part to its internal affairs, including immigration, labor, coastwise traffic, the tariff, commerce, the suppression of traffic in women and children, and in opium and other dangerous drugs, and all other domestic questions, are solely within the jurisdiction of the United States and are not under this treaty to be submitted in any way either to arbitration or to the consideration of the Council or of the Assembly of the League of Nations, or any agency thereof, or to the decision or recommendation of any other power.

5. The United States will not submit to arbitration or to inquiry by the Assembly or by the Council of the League of Nations, provided for in said treaty of peace, any questions which in the judgment of the United States depend upon or relate to its long-established policy, commonly known as the Monroe Doctrine; said doctrine is to be interpreted by the United States alone and is hereby declared to be wholly outside the jurisdiction of said League of Nations and entirely unaffected by any provision contained in the said treaty of peace with Germany.

6. The United States withholds its assent to Articles CLVI., CLVII., and CLVIII., and reserves full liberty of action with respect to any controversy which may arise under said articles between the Republic of China and the Empire of Japan.

7. The Congress of the United States will provide by law for the appointment of the representatives of the United States in the Assembly and the Council of

the League of Nations, and may in its discretion provide for the participation of the United States in any commission, committee, tribunal, court, council, or conference, or in the selection of any members thereof and for the appointment of members of said commissions, committees, tribunals, courts, councils, or conferences, or any other representatives under the treaty of peace, or in carrying out its provisions, and until such participation and appointment have been so provided for and the powers and duties of such representatives have been defined by law, no person shall represent the United States under either said League of Nations or the treaty of peace with Germany or be authorized to perform any act for or on behalf of the United States thereunder, and no citizen of the United States shall be selected or appointed as a member of said commissions, committees, tribunals, courts, councils, or conferences except with the approval of the Senate of the United States.

8. The United States understands that the Reparations Commission will regulate or interfere with exports from the United States to Germany, or from Germany to the United States, only when the United States by act or joint resolution of Congress approves such regulation or interference.

9. The United States shall not be obligated to contribute to any expenses of the League of Nations, or of the secretariat, or of any commission, or committee, or conference, or other agency, organized under the League of Nations or under the treaty or for the purpose of carrying out the treaty provisions, unless and until an appropriation of funds available for such expenses shall have been made by the Congress of the United States.

10. If the United States shall at any time adopt any plan for the limitation of armaments proposed by the Council of the League of Nations under the provisions of Article VIII., it reserves the right to increase such armaments without the consent of the council whenever the United States is threatened with invasion or engaged in war.

11. The United States reserves the right to permit, in its discretion, the nationals of a covenant-breaking State, as defined in Article XVI. of the covenant of the League of Nations, residing within the United States or in countries other than that violating said Article XVI., to continue their commercial, financial, and personal relations with the nationals of the United States.

12. Nothing in Articles CCXCVI., CCXCVII., or in any of the annexes thereto or in any other article, section, or annex of the treaty of peace with Germany shall, as against citizens of the United States, be taken to mean any confirmation, ratification, or approval of any act otherwise illegal or in contravention of the rights of citizens of the United States.

13. The United States withholds its assent to Part XIII (Articles CCCLXXXVII. to CCCCXXVII. inclusive) unless Congress by act or joint resolution shall hereafter make provision for representation in the organization established by said Part XIII. and in such event the participation of the United States will be governed and conditioned by the provisions of such act or joint resolution.

14. The United States assumes no obligation to be bound by any election, decision, report, or finding of the Council or Assembly in which any member of the League and its self-governing dominions, colonies, or parts of empire, in the aggregate have cast more than one vote, and assumes no obligation to be bound by any decision, report, or finding of the Council or Assembly arising out of any dispute between the United States and any member of the League if such member, or any self-governing dominion, colony, empire, or part of empire united with it politically has voted.

On 19 Nov. 1919 the treaty was rejected by the Senate. It was reintroduced 10 Feb. 1920 at the regular session. Substantially the same reservations were adopted together with a new one advocating self-determination for Ireland. Substitute reservations concerning Article X were offered. The treaty with amended reservations again failed of ratification when the final vote was reached on 19 March 1920. It was then withdrawn from the Senate and returned to the President.

After the Senate adjourned on 19 Nov. 1919 without ratifying the Treaty of Versailles, the representatives of England, France and Italy at Paris proceeded to make arrangements for the final ceremonies that would put the treaty into operation.

The chief steps to be taken were the formal exchange of ratifications and the deposit of the «instruments» in the archives of the French Foreign Office, the drawing up of the *procès-verbal* or formal record of the deposit of these instruments, and the promulgation of the treaty.

On 10 Jan. 1920 ratifications were formally exchanged at Paris between the signatory powers, and the *Procès-Verbal* was signed by Baron Kurt von Lersner for Germany, Premier Clemenceau for France, Premier Lloyd George for England, Premier Nitti for Italy and Baron Matsui for Japan. These were followed by the delegates of the following nations, who signed in the order named: Belgium, Bolivia, Brazil, Guatemala, Panama, Peru, Poland, Siam, Czechoslovakia and Uruguay. The United States, Greece, Roumania and China, not having ratified the treaty, did not sign.

The treaty went into effect at 4:15 P.M. (Paris time) 10 Jan. 1920. On 16 Jan. 1920 M. Léon Bourgeois became first president of the Council of the League of Nations and Sir Eric Drummond was made secretary.

The Treaty of Peace with Austria, which was handed to the Austrian delegates at Saint Germain on 2 June 1919, is in many respects identical with the peace treaty with Germany. The Austrian treaty consists of a preamble and 14 parts. The Austrian National Assembly ratified this treaty 17 Oct. 1919. The complete text follows the text of the Treaty with Germany.

The Bulgarian Treaty follows that of Austria. Two of the subsidiary treaties are included, that with Poland and the Franco-American Treaty. A summary of the short-lived Brest-Litovsk Treaty, so often referred to in the war articles, is also included.

I. Treaty with Germany.

The United States of America, the British Empire, France, Italy, and Japan, these powers being described in the present treaty as the principal Allied and Associated Powers; Belgium, Bolivia, Brazil, China, Cuba, Ecuador, Greece, Guatemala, Haiti, the Hedjaz, Honduras, Liberia, Nicaragua, Panama, Peru, Poland, Portugal, Rumania, the Serb-Croat-Slovene State; Siam, Czechoslovakia, and Uruguay, these powers constituting with the principal powers mentioned above the Allied and Associated Powers of the one part; and Germany, of the other part: Bearing in mind that on the request of the Imperial German Government an armistice was granted on Nov. 11, 1918, to Germany by the principal Allied and Associated Powers in order that a treaty of peace might be concluded with her, and the Allied and Associated Powers being equally desirous that the war in which they were successively involved directly or indirectly, and which originated in the declaration of war by Austria-Hungary on 28 July 1914, against Serbia; the declaration of war by Germany against Russia on 1 Aug. 1914, and against France on 3 Aug. 1914, and in the invasion of Belgium, should be replaced by a firm, just, and durable peace.

For this purpose the high contracting parties represented as follows:

THE PRESIDENT OF THE UNITED STATES OF AMERICA, by:
The Honorable Woodrow Wilson, President of the United States, acting in his own name and by his own proper authority;
The Honorable Robert Lansing, Secretary of State;
The Honorable Henry White, formerly Ambassador Extraordinary and Plenipotentiary of the United States at Rome and Paris;
The Honorable Edward M. House;
General Tasker H. Bliss, Military Representative of the United States on the Supreme War Council;

HIS MAJESTY THE KING OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND AND OF THE BRITISH DOMINIONS BEYOND THE SEAS, EMPEROR OF INDIA, by:
The Right Honorable David Lloyd George, M. P., First Lord of his Treasury and Prime Minister;
The Right Honorable Andrew Bonar Law, M. P., his Lord Privy Seal;
The Right Honorable Viscount Milner, G. C. B., G. C. M. G., his Secretary of State for the Colonies;
The Right Honorable Arthur James Balfour, O. M., M. P., his Secretary of State for Foreign Affairs;
The Right Honorable George Nicoll Barnes, M. P., Minister without portfolio; and

FOR THE DOMINION OF CANADA, by:
The Right Honorable Sir George Eulas Foster, G. C. M. G., Minister of Trade and Commerce;
The Right Honorable Charles Joseph Doherty, Minister of Justice;

FOR THE COMMONWEALTH OF AUSTRALIA, by:
The Right Honorable William Morris Hughes, Attorney General and Prime Minister;
The Right Honorable Sir Joseph Cook, G. C. M. G., Minister for the Navy;

FOR THE UNION OF SOUTH AFRICA, by:
General the Right Honorable Louis Botha, Prime Minister;
Lieut. General the Right Honorable Jan Christiaan Smuts, K. C., Minister of Defense;

FOR THE DOMINION OF NEW ZEALAND, by:
The Right Honorable William Ferguson Massey, Minister of Labor and Prime Minister;

FOR INDIA, by:
The Right Honorable Edwin Samuel Montagu, M. P., his Secretary of State for India;
Major General his Highness Maharaja Sir Ganga Singh Bahadur, Maharaja of Bikaner, G. C. S. I., G. C. I. E., G. C. V. O., K. C. B., A. D. C.;

THE PRESIDENT OF THE FRENCH REPUBLIC, by:
Mr Georges Clemenceau, President of the Council, Minister of War;
Mr. Pichon, Minister of Foreign Affairs;
Mr. L. L. Klotz, Minister of Finance;
Mr. André Tardieu, Commissary General for Franco-American Military Affairs;
Mr. Jules Cambon, Ambassador of France;

HIS MAJESTY THE KING OF ITALY, by:
Mr. V. O. Orlando, President of the Council of Ministers;
Baron S. Sonnino, Minister of Foreign Affairs;
Mr. S. Crespi, Deputy, Minister of Supplies;
Marquis G. Imperiali, Senator of the Kingdom, Ambassador of his Majesty the King of Italy at London;
Mr. S. Barzilai, Deputy, formerly Minister;

HIS MAJESTY THE EMPEROR OF JAPAN, by:
Marquis Saionzi, formerly President of the Council of Ministers;
Baron Makino, formerly Minister of Foreign Affairs, member of the Diplomatic Council;
Viscount Chinda, Ambassador Extraordinary and Plenipotentiary of H. M. the Emperor of Japan at London;
Mr. K. Matsui, Ambassador Extraordinary and Plenipotentiary of H. M. the Emperor of Japan at Paris;
Mr. H. Ijuin, Ambassador Extraordinary and Plenipotentiary of H. M. the Emperor of Japan at Rome;

HIS MAJESTY THE KING OF THE BELGIANS, by:
Mr. Hymans, Minister of Foreign Affairs, Minister of State;
Mr. Van Den Heuvel, Envoy Extraordinary and Minister Plenipotentiary of H. M. the King of the Belgians, Minister of State;
Mr. Vandervelde, Minister of Justice, Minister of State;

THE PRESIDENT OF THE REPUBLIC OF BOLIVIA, by:
Mr. Ismael Montes, Envoy Extraordinary and Minister Plenipotentiary of Bolivia at Paris;

THE PRESIDENT OF THE REPUBLIC OF BRAZIL, by:
Mr. Epitacio Pessoa, formerly Minister of State, formerly member of the Supreme Court of Justice, Federal Senator;
Mr. Pandiá Calogeras, Deputy, formerly Minister of Finance;
Mr. Raul Ferdnandes;

THE PRESIDENT OF THE CHINESE REPUBLIC, by:
Mr. Lou Tseng-Tsiang, Minister of Foreign Affairs;
Mr. Chengting Thomas Wang, formerly Minister of Agriculture and Commerce;

THE PRESIDENT OF THE CUBAN REPUBLIC, by:
Mr. Antonio Sanchez de Bustamante, Dean of the Faculty of Law in the University of Havana, President of the Cuban Society of International Law;

THE PRESIDENT OF THE REPUBLIC OF ECUADOR, by:
Mr. Enrique Dorn y de Alsua, Envoy Extraordinary and Minister Plenipotentiary of Ecuador at Paris;

HIS MAJESTY THE KING OF THE HELLENES, by:
Mr. Eleftherios Venizelos, President of the Council of Ministers;
Mr. Nicolas Politis, Minister of Foreign Affairs;

THE PRESIDENT OF THE REPUBLIC OF GUATEMALA, by:
Mr. Joaquin Mendez, formerly Minister of State for Public Works and Public Instruction, Envoy Extraordinary and Minister Plenipotentiary of Guatemala at Washington, Envoy Extraordinary and Minister Plenipotentiary on Special Mission at Paris;

THE PRESIDENT OF THE REPUBLIC OF HAITI, by:
Mr. Tertullien Guilbaud, Envoy Extraordinary and Minister Plenipotentiary of Haiti at Paris;

HIS MAJESTY THE KING OF THE HEDJAZ, by:
Mr. Rustem Haidar,
Mr. Abdul Hadi Aouni;

THE PRESIDENT OF THE REPUBLIC OF HONDURAS, by:
Dr. Policarpe Bonilla, on special mission to Washington, formerly President of the Republic of Honduras, Envoy Extraordinary and Minister Plenipotentiary;

THE PRESIDENT OF THE REPUBLIC OF LIBERIA, by:
The Honorable C. D. B. King, Secretary of State;

THE PRESIDENT OF THE REPUBLIC OF NICARAGUA, by:
Mr. Salvador Chamorro, President of the Chamber of Deputies;

THE PRESIDENT OF THE REPUBLIC OF PANAMA, by:
Mr. Antonio Burgos, Envoy Extraordinary and Minister Plenipotentiary of Panama at Madrid;

THE PRESDENT OF THE REPUBLIC OF PERU, by:
Mr. Carlos G. Candamo, Envoy Extraordinary and Minister Plenipotentiary of Peru at Paris;

THE PRESIDENT OF THE POLISH REPUBLIC, by:
Mr. Roman Dmowski, President of the Polish National Committee;
Mr. Ignace Paderewski, President of the Council of Ministers, Minister of Foreign Affairs;

THE PRESIDENT OF THE PORTUGUESE REPUBLIC, by:
Dr. Affonso Costa, formerly President of the Council of Ministers;
Mr. Augusto Soares, formerly Minister of Foreign Affairs;

HIS MAJESTY THE KING OF RUMANIA, by:
Mr. Jean J. C. Bratiano, President of the Council of Ministers, Minister of Foreign Affairs;
General Constantin Coanda, Corps Commander, A. D. C. to the King, formerly President of the Council of Ministers;

HIS MAJESTY THE KING OF THE SERBS, THE CROATS, AND THE SLOVENES, by:
Mr. N. P. Pachitch, formerly President of the Council of Ministers;
Mr. Ante Trumbic, Minister of Foreign Affairs;
Mr. Milenko R. Vesnitch, Envoy Extraordinary and Minister Plenipotentiary of H. M. the King of the Serbs, the Croats, and the Slovenes at Paris;

HIS MAJESTY THE KING OF SIAM, by:
Prince Charoon, Envoy Extraordinary and Minister Plenipotentiary of H. M. the King of Siam at Paris;
Prince Traidos Prabandhu, Under Secretary of State for Foreign Affairs;

THE PRESIDENT OF THE CZECHO-SLOVAK REPUBLIC, by:
Mr. Charles Kramar, President of the Council of Ministers;
Mr. Edouard Benes, Minister of Foreign Affairs;

THE PRESIDENT OF THE REPUBLIC OF URUGUAY, by:
Mr. Juan Antonio Buero, Minister of Industry, formerly Minister of Foreign Affairs;

GERMANY, by:
Count Brockdorff-Rantzau, Minister for Foreign Affairs of the Empire;
Dr. Landsberg, Minister of Justice of the Empire;
Mr. Giesberts, Minister of Posts of the Empire;
Oberbürgermeister Leinert, President of the Prussian National Assembly;
Dr. Schücking;
Dr. Karl Melchior;

Acting in the name of the German Empire and of each and every component State,

WHO having communicated their full powers found in good and due form HAVE AGREED AS FOLLOWS:

From the coming into force of the present treaty the state of war will terminate. From that moment and subject to the provisions of this treaty official relations with Germany and with any of the German States will be resumed by the Allied and Associated Powers.

PART I.—THE COVENANT OF THE LEAGUE OF NATIONS.

The high contracting parties, in order to promote international co-operation and to achieve international peace and security by the acceptance of obligations not to resort to war, by the prescription of open, just, and honorable relations between nations, by the firm establishment of the understandings of international law as the actual rule of conduct among Governments, and by the maintenance of justice and a scrupulous respect for all treaty obligations in the dealings of organized peoples with one another, agree to this covenant of the League of Nations.

Article 1.— The original members of the League of Nations shall be those of the signatories which are named in the annex to this covenant and also such of those other States named in the annex as shall accede without reservation to this covenant. Such accession shall be effected by a declaration deposited with the secretariat within two months of the coming into force of the covenant. Notice thereof shall be sent to all other members of the League.

Any fully self-governing State, dominion, or colony not named in the annex may become a member of the League if its admission is agreed to by two-thirds of the assembly, provided that it shall give effective guarantees of its sincere intention to observe its international obligations, and shall accept such regulations as may be prescribed by the League in regard to its military, naval and air forces and armaments.

Any member of the League may, after two years' notice of its intention so to do, withdraw from the League, provided that all its international obligations and all its obligations under this covenant shall have been fulfilled at the time of its withdrawal.

Article 2.— The action of the League under this covenant shall be effected through the instrumentality of an assembly and of a council, with a permanent secretariat.

Article 3.— The assembly shall consist of representatives of the members of the League.

The assembly shall meet at stated intervals and from time to time as occasion may require at the seat of the League or at such other place as may be decided upon.

The assembly may deal at its meetings with any matter within the sphere of action of the League or affecting the peace of the world.

At meetings of the assembly each member of the League shall have one vote, and may have not more than three representatives.

Article 4.— The council shall consist of representatives of the principal Allied and Associated Powers, together with the representatives of four other members of the League. These four members of the League shall be selected by the assembly from time to time in its discretion. Until the appointment of the representatives of the four members of the League first selected by the assembly, representatives of Belgium, Brazil, Spain, and Greece shall be members of the council.

With the approval of the majority of the assembly, the council may name additional members of the League whose representatives shall always be members of the council; the council with like approval may increase the number of members of the League to be selected by the assembly for representation on the council.

The council shall meet from time to time as occasion may require, and at least once a year, at the seat of the League, or at such other place as may be decided upon.

The council may deal at its meetings with any matter within the sphere of action of the League or affecting the peace of the world.

Any member of the League not represented on the council shall be invited to send a representative to sit as a member at any meeting of the council during the consideration of matters specially affecting the interests of that member of the League.

At meetings of the council, each member of the League represented on the council shall have one vote, and may have not more than one representative.

Article 5.— Except where otherwise expressly provided in this covenant or by the terms of the present treaty, decisions at any meeting of the assembly or of the council shall require the agreement of all the members of the League represented at the meeting.

All matters of procedure at meetings of the assembly or of the council, including the appointment of committees to investigate particular matters, shall be regulated by the assembly or by the council and may be decided by a majority of the members of the League represented at the meeting.

The first meeting of the assembly and the first meeting of the council shall be summoned by the President of the United States of America.

Article 6.— The permanent secretariat shall be established at the seat of the League. The secretariat shall comprise a Secretary General and such secretaries and staff as may be required.

The first Secretary General shall be the person named in the annex; thereafter the Secretary General shall be appointed by the council with the approval of the majority of the assembly.

The secretaries and staff of the secretariat shall be appointed by the Secretary General with the approval of the council.

The Secretary General shall act in that capacity at all meetings of the assembly and of the council.

The expenses of the secretariat shall be borne by the members of the League in accordance with the apportionment of the expenses of the International Bureau of the Universal Postal Union.

Article 7.— The seat of the League is established at Geneva.

The council may at any time decide that the seat of the League shall be established elsewhere.

All positions under or in connection with the League, including the secretariat, shall be open equally to men and women.

Representatives of the members of the League and officials of the League when engaged on the business of the League shall enjoy diplomatic privileges and immunities.

The buildings and other property occupied by the

League or its officials or by representatives attending its meetings shall be inviolable.

Article 8.— The members of the League recognize that the maintenance of peace requires the reduction of national armaments to the lowest point consistent with national safety and the enforcement by common action of international obligations.

The council, taking account of the geographical situation and circumstances of each State, shall formulate plans for such reduction for the consideration and action of the several Governments.

Such plans shall be subject to reconsideration and revision at least every ten years.

After these plans shall have been adopted by the several Governments, the limits of armaments therein fixed shall not be exceeded without the concurrence of the council.

The members of the League agree that the manufacture by private enterprise of munitions and implements of war is open to grave objections. The council shall advise how the evil effects attendant upon such manufacture can be prevented, due regard being had to the necessities of those members of the League which are not able to manufacture the munitions and implements of war necessary for their safety.

The members of the League undertake to interchange full and frank information as to the scale of their armaments, their military and naval programs and the condition of such of their industries as are adaptable to warlike purposes.

Article 9.— A permanent commission shall be constituted to advise the council on the execution of the provisions of Articles 1 and 8 and on military and naval questions generally.

Article 10.— The members of the League undertake to respect and preserve as against external aggression the territorial integrity and existing political independence of all members of the League. In case of any such aggression or in case of any threat or danger of such aggression the council shall advise upon the means by which this obligation shall be fulfilled.

Article 11.— Any war or threat of war, whether immediately affecting any of the members of the League or not, is hereby declared a matter of concern to the whole League, and the League shall take any action that may be deemed wise and effectual to safeguard the peace of nations. In case any such emergency should arise the Secretary General shall on the request of any member of the League forthwith summon a meeting of the council.

It is also declared to be the friendly right of each member of the League to bring to the attention of the assembly or of the council any circumstance whatever affecting international relations which threatens to disturb international peace or the good understanding between nations upon which peace depends.

Article 12.— The members of the League agree that if there should arise between them any dispute likely to lead to a rupture, they will submit the matter either to arbitration or to inquiry by the council, and they agree in no case to resort to war until three months after the award by the arbitrators or the report by the council.

In any case under this article the award of the arbitrators shall be made within a reasonable time, and the report of the council shall be made within six months after the submission of the dispute.

Article 13.— The members of the League agree that whenever any dispute shall arise between them which they recognize to be suitable for submission to arbitration and which cannot be satisfactorily settled by diplomacy, they will submit the whole subject-matter to arbitration.

Disputes as to the interpretation of a treaty, as to any question of international law, as to the existence of any fact which if established would constitute a breach of any international obligation, or as to the extent and nature of the reparation to be made for any such breach, are declared to be among those which are generally suitable for submission to arbitration.

For the consideration of any such dispute the Court of Arbitration to which the case is referred shall be the court agreed on by the parties to the dispute or stipulated in any convention existing between them.

The members of the League agree that they will carry out in full good faith any award that may be rendered, and that they will not resort to war against a member of the League which complies therewith. In the event of any failure to carry out such an award, the council shall propose what steps should be taken to give effect thereto.

Article 14.— The council shall formulate and submit to the members of the League for adoption plans for the establishment of a Permanent Court of International Justice. The court shall be competent to hear and determine any dispute of an international character which the parties thereto submit to it. The court may also give an advisory opinion upon any dispute or question referred to it by the council or by the assembly.

Article 15.— If there should arise between members of the League any dispute likely to lead to a rupture, which is not submitted to arbitration in accordance with Article 13, the members of the League agree that they will submit the matter to the council. Any party to the dispute may effect such submission by giving notice of the existence of the dispute to the Secretary General, who will make all necessary arrangements for a full investigation and consideration thereof.

For this purpose the parties to the dispute will communicate to the Secretary General, as promptly as possible, statements of their case with all the relevant facts and papers, and the council may forthwith direct the publication thereof.

The council shall endeavor to effect a settlement of the dispute, and if such efforts are successful a statement shall be made public giving such facts and explanations regarding the dispute and the terms of settlement thereof as the council may deem appropriate.

If the dispute is not thus settled, the council either unanimously or by a majority vote shall make and publish a report containing a statement of the facts of the dispute and the recommendations which are deemed just and proper in regard thereto.

Any member of the League represented on the council may make public a statement of the facts of the dispute and of its conclusions regarding the same.

If a report by the council is unanimously agreed to by the members thereof other than the representatives of one or more of the parties to the dispute, the members of the League agree that they will not go to war with any party to the dispute which complies with the recommendations of the report.

If the council fails to reach a report which is unanimously agreed to by the members thereof, other than the representatives of one or more of the parties to the dispute, the members of the League reserve to themselves the right to take such action as they shall consider necessary for the maintenance of right and justice.

If the dispute between the parties is claimed by one of them, and is found by the council to arise out of a matter which by international law is solely within the domestic jurisdiction of that party, the council shall so report, and shall make no recommendation as to its settlement.

The council may in any case under this article refer the dispute to the assembly. The dispute shall be so referred at the request of either party to the dispute, provided that such request be made within fourteen days after the submission of the dispute to the council.

In any case referred to the assembly all the provisions of this article and of article 12 relating to the action and powers of the council shall apply to the action and powers of the assembly, provided that a report made by the assembly, if concurred in by the representatives of those members of the League represented on the council and of a majority of the other members of the League, exclusive in each case of the representatives of the parties to the dispute, shall have the same force as a report by the council concurred in by all the members thereof other than the representatives of one or more of the parties to the dispute.

Article 16.— Should any member of the League resort to war in disregard of its covenants under Articles 12, 13, or 15, it shall ipso facto be deemed to have committed an act of war against all other members of the League, which hereby undertake immediately to subject it to the severance of all trade or financial relations, the prohibition of all intercourse between their nationals and the nationals of the covenant-breaking State, and the prevention of all financial, commercial, or personal intercourse between the nationals of the covenant-breaking State and the nationals of any other State, whether a member of the League or not.

It shall be the duty of the council in such case to recommend to the several Governments concerned what effective military, naval or air force the members of the League shall severally contribute to the armed forces to be used to protect the covenants of the League.

The members of the League agree, further, that they will mutually support one another in the financial and economic measures which are taken under this article, in order to minimize the loss and inconvenience resulting from the above measures, and that they will mutually support one another in resisting any special measures aimed at one of their number by the covenant-breaking State, and that they will take the neces-

sary steps to afford passage through their territory to the forces of any of the members of the League which are co-operating to protect the covenants of the League.

Any member of the League which has violated any covenant of the League may be declared to be no longer a member of the League by a vote of the council concurred in by the representatives of all the other members of the League represented thereon.

Article 17.— In the event of a dispute between a member of the League and a State which is not a member of the League, or between States not members of the League, the State or States not members of the League shall be invited to accept the obligations of membership in the League for the purposes of such dispute, upon such conditions as the council may deem just. If such invitation is accepted, the provisions of Articles 12 to 16 inclusive shall be applied with such modifications as may be deemed necessary by the council.

Upon such invitation being given the council shall immediately institute an inquiry into the circumstances of the dispute and recommend such action as may seem best and most effectual in the circumstances.

If a State so invited shall refuse to accept the obligations of membership in the League for the purposes of such dispute, and shall resort to war against a member of the League, the provisions of Article 16 shall be applicable as against the State taking such action.

If both parties to the dispute when so invited refuse to accept the obligations of membership in the League for the purposes of such dispute, the council may take such measures and make such recommendations as will prevent hostilities and will result in the settlement of the dispute.

Article 18.— Every treaty or international engagement entered into hereafter by any member of the League shall be forthwith registered with the Secretariat and shall as soon as possible be published by it. No such treaty or international engagement shall be binding until so registered.

Article 19.— The assembly may from time to time advise the reconsideration by members of the League of treaties which have become inapplicable and the consideration of international conditions whose continuance might endanger the peace of the world.

Article 20.— The members of the League severally agree that this covenant is accepted as abrogating all obligations or understandings inter se which are inconsistent with the terms thereof, and solemnly undertake that they will not hereafter enter into any engagements inconsistent with the terms thereof.

In case any member of the League shall, before becoming a member of the League, have undertaken any obligations inconsistent with the terms of this covenant, it shall be the duty of such member to take immediate steps to procure its release from such obligations.

Article 21.— Nothing in this covenant shall be deemed to affect the validity of international engagements, such as treaties of arbitration or regional understandings like the Monroe Doctrine, for securing the maintenance of peace.

Article 22.— To those colonies and territories which as a consequence of the late war have ceased to be under the sovereignty of the States which formerly governed them and which are inhabited by peoples not yet able to stand by themselves under the strenuous conditions of the modern world, there should be applied the principle that the well-being and development of such peoples form a sacred trust of civilization and that securities for the performance of this trust should be embodied in this covenant.

The best method of giving practical effect to this principle is that the tutelage of such peoples should be intrusted to advanced nations who by reason of their resources, their experience or their geographical position can best undertake this responsibility, and who are willing to accept it, and that this tutelage should be exercised by them as mandataries on behalf of the League.

The character of the mandate must differ according to the stage of the development of the people, the geographical situation of the territory, its economic conditions and other similar circumstances.

Certain communities formerly belonging to the Turkish Empire have reached a stage of development where their existence as independent nations can be provisionally recognized subject to the rendering of administrative advice and assistance by a mandatary until such time as they are able to stand alone. The wishes of these communities must be a principal consideration in the selection of the mandatary.

Other peoples, especially those of Central Africa, are at such a stage that the mandatary must be responsible for the administration of the territory under conditions which will guarantee freedom of conscience and religion, subject only to the maintenance of public order and morals, the prohibition of abuses such as the slave trade, the arms traffic and the liquor traffic, and the prevention of the establishment of fortifications or military and naval bases and of military training of the natives for other than police purposes and the defense of territory, and will also secure equal opportunities for the trade and commerce of other members of the League.

There are territories, such as Southwest Africa and certain of the South Pacific islands, which, owing to the sparseness of their population or their small size, or their remoteness from the centres of civilization; or their geographical contiguity to the territory of the mandatary, and other circumstances, can be best administered under the laws of the mandatary as integral portions of its territory, subject to the safeguards above mentioned in the interests of the indigenous population.

In every case of mandate the mandatary shall render to the council an annual report in reference to the territory committed to its charge.

The degree of authority, control, or administration to be exercised by the mandatary shall, if not previously agreed upon by the members of the League, be explicitly defined in each case by the council.

A permanent commission shall be constituted to receive and examine the annual reports of the mandataries and to advise the council on all matters relating to the observance of the mandates.

Article 23.— Subject to and in accordance with the provisions of international conventions existing or hereafter to be agreed upon, the members of the League:

(a) will endeavor to secure and maintain fair and humane conditions of labor for men, women, and children, both in their own countries and in all countries to which their commercial and industrial relations extend, and for that purpose will establish and maintain the necessary international organizations;

(b) undertake to secure just treatment of the native inhabitants of territories under their control;

(c) will intrust the League with the general supervision over the execution of agreements with regard to the traffic in women and children and the traffic in opium and other dangerous drugs;

(d) will intrust the League with the general supervision of the trade in arms and ammunition with the countries in which the control of this traffic is necessary in the common interest;

(e) will make provision to secure and maintain freedom of communications and of transit and equitable treatment for the commerce of all members of the League. In this connection the special necessities of the regions devastated during the war of 1914–1918 shall be borne in mind;

(f) will endeavor to take steps in matters of international concern for the prevention and control of disease.

Article 24.— There shall be placed under the direction of the League all international bureaus already established by general treaties if the parties to such treaties consent. All such international bureaus and all commissions for the regulation of matters of international interest hereafter constituted shall be placed under the direction of the League.

In all matters of international interest which are regulated by general conventions but which are not placed under the control of international bureaus or commissions, the secretariat of the League shall, subject to the consent of the council and if desired by the parties, collect and distribute all relevant information and shall render any other assistance which may be necessary or desirable.

The council may include as part of the expenses of the secretariat the expenses of any bureau or commission which is placed under the direction of the League.

Article 25.— The members of the League agree to encourage and promote the establishment and co-operation of duly authorized voluntary national Red Cross organizations, having as purposes the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world.

Article 26.— Amendments to this covenant will take effect when ratified by the members of the League

whose representatives compose the council and by a majority of the members of the League whose representatives compose the assembly.

No such amendment shall bind any member of the League which signifies its dissent therefrom, but in that case it shall cease to be a member of the League.

ANNEX.

I. Original members of the League of Nations signatories of the treaty of peace.

United States of America.
Belgium.
Bolivia.
Brazil.
British Empire.
Canada.
Australia.
South Africa.
New Zealand.
India.
China.
Cuba.
Czecho-Slovakia.
Ecuador.
France.
Greece.
Guatemala.
Haiti.
Hedjaz.
Honduras.
Italy.
Japan.
Liberia.
Nicaragua.
Panama.
Peru.
Poland.
Portugal.
Rumania.
Serb-Croat-Slovene State.
Siam.
Uruguay.

States invited to accede to the covenant.

Argentine Republic.
Chile.
Colombia.
Denmark.
Netherlands.
Norway.
Paraguay.
Persia.
Salvador.
Spain.
Sweden.
Switzerland.
Venezuela.

II. First Secretary General of the League of Nations.

The Honorable Sir James Eric Drummond, K. C. M. G., C. B.

PART II.— BOUNDARIES OF GERMANY.

Article 27.— The boundaries of Germany will be determined as follows:

1. With Belgium: From the point common to the three frontiers of Belgium, Holland, and Germany, and in a southerly direction; the northeastern boundary of the former territory of neutral Moresnet, then the eastern boundary of the Kreis of Eupen, then the frontier between Belgium and the Kreis of Montjoie, then the northeastern and eastern boundary of the Kreis of Malmédy to its junction with the frontier of Luxemburg.

2. With Luxemburg: The frontier of the 3d August, 1914, to its junction with the frontier of France of the 18th July, 1870.

3. With France: The frontier of the 18th July, 1870, from Luxemburg to Switzerland, with the reservations made in Article 48 of Section 4 (Sarre Basin) of Part III.

4. With Switzerland: The present frontier.

5. With Austria: The frontier of the 3d August, 1914, from Switzerland to Czecho-Slovakia is hereinafter defined.

6. With Czecho-Slovakia: The frontier of the 3d August, 1914, between Germany and Austria from its junction with the old administrative boundary separating Bohemia and the Province of Upper Austria to the point north of the salient of the old Province of Austrian Silesia situated at about eight kilometers east of Neustadt.

7. With Poland: From the point defined above to a point to be fixed on the ground about 2 kilometers east of Lorzendorf: the frontier as it will be fixed in accordance with Article 88 of the present treaty; thence in a northerly direction to the point where the administrative boundary of Posnania crosses the river Bartsch: a line to be fixed on the ground leaving the following places in Poland: Skorischau, Reichthal, Trembatschau, Kunzendorf, Schleise, Gross Kosel, Schreibersdorf, Rippin, Fürstlich-Niefken, Pawelau, Tscheschen, Konradau, Johannisdorf, Modzenowe, Bogdaj, and in Germany: Lozendorf, Kaulwitz, Glausche, Dalabersdorf, Reesewitz, Stradam, Gross Nartenberg Kraschen, Neu Mittelwalde, Domaslawitz, Wedelsdorf, Tscheschen Hammer; thence the boundary of Posnania northwestward to the point where it cuts the Rawitsch-Herrnstadt railway; thence to the point where the administrative boundary of Posnania cuts the Reisen-Tschirnau road: a line to be fixed on the ground passing west of Triebusch and Gabel and east of Saborwitz; thence the administrative boundary of Posnania to its junction with the eastern boundary of the Kreis of Fraustadt;

Thence in a northwesterly direction to a point to be chosen on the road between the villages of Unruhstadt and Kophitz; a line to be fixed on the ground passing west of Geyersdorf, Brenno, Fehlen, Altkloster, Klebel, and east of Ulbersdorf, Buchwald, Ilgen, Weine, Lupitze, Schwenten; thence in a northerly direction to the northernmost point of Lake Chlop: a line to be fixed on the ground following the median line of the lakes; the town and the station of Bentschen, however, (including the junction of the lines Schwiebus-Bentschen and Züllichau-Bentschen,) remaining in Polish territory;

Thence in a northeasterly direction to the point of junction of the boundaries of the Kreise of Schwerin, Birbaum, and Meseritz: a line to be fixed on the ground passing east of Betsche; thence in a northerly direction the boundary separating the Kreise of Schwerin and Birnbaum, then in an easterly direction the northern boundary of Posnania and to the point where it cuts the river Netze; thence upstream to its confluence with the Küddow: the course of the Netze; thence upstream to a point to be chosen about 6 kilometers southeast of Schneidemühl; the course of the Küdow;

Thence northeastward to the most southern point of the re-entrant of the northern boundary of Posnania about 5 kilometers west of Stahren: a line to be fixed on the ground leaving the Schneidemühl-Konitz railway in this area entirely in German territory; thence the boundary of Posnania northeastward to the point of the salient it makes about 15 kilometers east of Flatow; thence northeastward to the point where the river Kamionka meets the southern boundary of the Kreis of Konitz about 3 kilometers northeast of Grunau: a line to be fixed on the ground leaving the following places to Poland: Jasdrowo, Gr. Lutau, Kl. Lutau and Wittkau, and to Germany: Gr. Butzig, Cziskowo, Battow, Böch, and Grunau;

Thence in a northerly direction the boundary between the Kreise of Konitz and Schlochau to the point where this boundary cuts the river Brahe; thence to a point on the boundary of Pomerania 15 kilometers east of Rummelsburg: a line to be fixed on the ground leaving the following localities in Poland; Konarzin, Kelpin, Adl. Briesen, and in Germany: Sampohl, Neuguth, Steinfort, and Gr. Peterkau; then the boundary of Pomerania in an easterly direction to its junction with the boundary between the Kowo, Battrow, Böch, and Grunau;

Thence northward the boundary between Pomerania and West Prussia to the point on the river Rheda about 3 kilometers northwest of Gohra, where that river is joined by a tributary from the northwest; thence to a point to be selected in the bend of the Piasnitz River about 1½ kilometers northwest of Warschkau: a line to be fixed on the ground; thence this river downstream, then the median line of Lake Zarnowitz, then the old boundary of West Prussia to the Baltic Sea.

8. With Denmark: The frontier as it will be fixed in accordance with Articles 109 and 110 of Part III, Section XII (Schleswig).

Article 28.— The boundaries of East Prussia, with the reservations made in Section IX (East Prussia) of Part III will be determined as follows:

From a point on the coast of the Baltic Sea about 1½ kilometers north of Pröbbernau Church in a direction of about 159 degrees east from true north: A line to be fixed on the ground for about 2 kilometers, thence in a straight line to the light at the bend of the Elbinger Channel in approximately latitude 54.19½ north, longitude 19.26 east of Greenwich;

Thence to the easternmost mouth of the Nogat River at a bearing of approximately 209 degrees east from true north;

Thence up the course of the Nogat River to the point where the latter leaves the Vistula (Weichsel);

Thence up the principal channel of navigation of the Vistula, then the southern boundary of the Kreis of Marienwerder, then that of the Kreis of Rosenberg, eastward to that point where it meets the old boundary of East Prussia;

Thence the old boundary between East and West Prussia, then the boundary between the Kreise of Osterode and Neidenburg, then the course of the River Skottau down stream, then the course of the Neide up stream to a point situated about 5 kilometers west of Bialutten, being the nearest point to the old frontier of Russia, thence in an easterly direction to a point immediately south of the intersection of the road Neidenburg-Mlava with the old frontier of Russia:

A line to be fixed on the ground passing north of Bialutten;

Thence the old frontier of Russia to a point east of Schmalleningken, then the principal channel of navi-

gation of the Niemen (Memel) down stream, then the Skierwieth arm of the delta to the Kurisches Haff:

Thence a straight line to the point where the eastern shore of the Kurische Nehrung meets the administrative boundary about 4 kilometers southwest of Nidden:

Thence this administrative boundary to the western shore of the Kurische Nehrung.

Article 29.— The boundaries as described above are drawn in red on a one-in-a-million map which is annexed to the present treaty. (Map No. 1.)

In the case of any discrepancies between the text of the treaty and this map or any other map which may be annexed, the text will be final.

Article 30.— In the case of boundaries which are defined by a waterway, the terms "course" and "channel" used in the present treaty signify: in the case of non-navigable rivers, the median line of the waterway or of its principal arm, and in the case of navigable rivers the median line of the principal channel of navigation. It will rest with the boundary commissions provided by the present treaty to specify in each case whether the frontier line shall follow any changes of the course or channel which may take place or whether it shall be definitely fixed by the position of the course or channel at the time when the present treaty comes into force.

PART III.— POLITICAL CLAUSES FOR EUROPE.

SECTION I.— BELGIUM.

Article 31.— Germany, recognizing that the treaties of April 19, 1839, which established the status of Belgium before the war, no longer conform to the requirements of the situation, consents to the abrogation of the said treaties and undertakes immediately to recognize and to observe whatever conventions may be entered into by the principal allied and associated powers, or by any of them in concert with the Governments of Belgium and of the Netherlands, to replace the said treaties of 1839. If her formal adhesion should be required to such conventions or to any of their stipulations, Germany undertakes immediately to give it.

Article 32.— Germany recognizes the full sovereignty of Belgium over the whole of the contested territory of Moresnet, (called Moresnet Neutre.)

Article 33.— Germany renounces in favor of Belgium all rights and title over the territory of Prussian Moresnet situated on the west of the road from Liége to Aix-la-Chapelle: the road will belong to Belgium where it bounds this territory.

Article 34.— Germany renounces in favor of Belgium all rights and title over the territory comprising the whole of the Kreise of Eupen and of Malmédy.

During the six months after the coming into force of this treaty, registers will be opened by the Belgian authorities at Eupen and Malmédy in which the inhabitants of the above territory will be entitled to record in writing a desire to see the whole or part of it remain under Germany sovereignty.

The results of this public expression of opinion will be communicated by the Belgian Government to the League of Nations, and Belgium undertakes to accept the decision of the League.

Article 35.— A commission of seven persons, five of whom will be appointed by the principal allied and associated powers, one by Germany and one by Belgium, will be set up fifteen days after the coming into force of the present treaty to settle on the spot the new frontier line between Belgium and Germany, taking into account the economic factors and the means of communication.

Decisions will be taken by a majority and will be binding on the parties concerned.

Article 36.— When the transfer of the sovereignty over the territories referred to above has become definitive, German nationals habitually resident in the territories will definitively acquire Belgian nationality ipso facto, and will lose their German nationality.

Nevertheless German nationals who become resident in the territories after the 1st August, 1914, shall not obtain Belgian nationality without a permit from the Belgian Government.

Article 37.— Within the two years following the definitive transfer of the sovereignty over the territories assigned to Belgium under the present treaty, German nationals over 18 years of age habitually resident in those territories will be entitled to opt for German nationality.

Option by a husband will cover his wife, and option by parents will cover their children under 18 years of age.

Persons who have exercised the above right to opt must within the ensuing twelve months transfer their place of residence to Germany.

They will be entitled to retain their immovable property in the territories acquired by Belgium. They may carry with them their movable property of every description. No export or import duties may be imposed upon them in connection with the removal of such property.

Article 38.— The German Government will hand over without delay to the Belgian Government the archives, registers, plans, title deeds and documents of every kind concerning the civil, military, financial, judicial or other administrations in the territory transferred to Belgian sovereignty.

The German Government will likewise restore to the Belgian Government the archives and documents of every kind carried off during the war by the German authorities from the Belgian public administrations, in particular from the Ministry of Foreign Affairs at Brussels.

Article 39.— The proportion and nature of the financial liabilities of Germany and of Prussia which Belgium will have to bear on account of the territories ceded to her shall be fixed in conformity with Articles 254 and 256 of Part IX. (financial clauses) of the present treaty.

SECTION II.— LUXEMBURG.

Article 40.— With regard to the Grand Duchy of Luxemburg, Germany renounces the benefit of all the provisions inserted in her favor in the treaties of Feb. 8, 1842; April 2, 1847; Oct. 20–25, 1865; Aug. 18, 1866; Feb. 21 and May 11, 1867; May 10, 1871; June 11, 1872, and Nov. 11, 1902, and in all conventions consequent upon such treaties.

Germany recognizes that the Grand Duchy of Luxemburg ceased to form part of the German Zollverein as from Jan. 1, 1919; renounces all right to the exploitation of the railways, adheres to the termination of the régime of neutrality of the Grand Duchy, and accepts in advance all international arrangements which may be concluded by the Allied and Associated Powers relating to the Grand Duchy.

Article 41.— Germany undertakes to grant to the Grand Duchy of Luxemburg, when a demand to that effect is made to her by the principal Allied and Associated Powers, the rights and advantages stipulated in favor of such powers or their nationals in the present treaty, with regard to economic questions, to questions relative to transport and to aerial navigation.

SECTION III.— LEFT BANK OF THE RHINE.

Article 42.— Germany is forbidden to maintain or construct any fortifications either on the left bank of the Rhine or on the right bank to the west of a line drawn fifty kilometers to the east of the Rhine.

Article 43.— In the area defined above the maintenance and the assembly of armed forces either permanently or temporarily, and military manœuvres of any kind, as well as the upkeep of all permanent works for mobilization, are in the same way forbidden.

Article 44.—In case Germany violates in any manner the provisions of Articles 42 and 43, she shall be regarded as committing a hostile act against the powers signatory of the present treaty and as calculated to disturb the peace of the world.

SECTION IV.— SARRE BASIN.

Article 45.—As compensation for the destruction of the coal mines in the North of France and as part payment toward the total reparation due from Germany for the damage resulting from the war, Germany cedes to France in full and absolute possession, with exclusive rights of exploitation, unincumbered and free from all debts and charges of any kind, the coal mines situated in the Sarre Basin as defined in Article 48.

Article 46.— In order to assure the rights and welfare of the population and to guarantee to France complete freedom in working the mines, Germany agrees to the provisions of Chapters 1 and 2 of the annex hereto.

Article 47.— In order to make in due time permanent provision for the government of the Sarre Basin in accordance with the wishes of the population, France and Germany agree to the provisions of Chapter 3 of the annex hereto.

Article 48.— The boundaries of the territory of the Sarre Basin, as dealt with in the present stipulations, will be fixed as follows:

On the south and southwest: By the frontier of France as fixed by the present treaty.

On the northwest and north: By a line following

the northern administrative boundary of the Kreis of Merzig from the point where it leaves the French frontier to the point where it meets the administrative boundary, separating the commune of Saarhölzbach from the commune of Britten; following this communal boundary southward and reaching the administrative boundary of the Canton of Merzig so as to include in the territory of the Sarre Basin the Canton of Mettlach, with the exception of the commune of Britten; following successively the northern administrative limits of the Cantons of Merzig and Haustadt, which are incorporated in the aforesaid Sarre Basin, then successively the administrative boundaries separating the Kreise of Saarelouis, Ottweiler, and Saint Wendel from the Kreise of Merzig, Treves, (Trier,) and the principality of Birkenfeld as far as a point situated about 500 meters north of the village of Furschweiler, (viz.: The highest point of the Metzelberg).

On the northeast and east: From the last point defined above to a point about 3½ kilometers east-northeast of Saint Wendel:

A line to be fixed on the ground passing east of Furschweiler, west of Roschberg, east of points 418, 329, (south of Roschberg,) west of Leitersweiler, northeast of point 464, and following the line of the crest southward to its junction with the administrative boundary of the Kreis of Kusel;

Thence in a southerly direction the boundary of the Kreis of Kusel, then the boundary of the Kreis of Homburg toward the south-southeast to a point situated about 1,000 meters west of Dunzweiler;

Thence to a point about one kilometer south of Hornbach: a line to be fixed on the ground passing through point 424, (about 1,000 meters southeast of Dunzweiler,) point 363, (Fuchsberg,) point 322, (southwest of Waldmohr,) then east of Jägersburg and Erbach, then encircling Homburg, passes through the points 361, (about 2½ kilometers northeast by east of that town,) 342, (about 2 kilometers southeast of that town,) 347, (Schreinersberg,) 356, 350, (about 1½ kilometers southeast of Schwarzenbach,) then passing east of Einöd, southeast of points 322 and 333, about 2 kilometers east of Webenheim, about 2 kilometers east of Mimbach, passing east of the plateau which is traversed by the road from Mimbach to Böckweiler, (so as to include this road in the territory of the Sarre Basin,) passing immediately north of the junction of the roads from Böckweiler and Altheim, situated about 2 kilometers north of Altheim, then passing south of Ringweilderhof and north of point 322, rejoining the frontier of France at the angle which it makes about 1 kilometer south of Hornbach, (see map No. 2, scale 1-100,000, annexed to the present treaty).

A commission composed of five members, one appointed by France, one by Germany, and three by the Council of the League of Nations, which will select nationals of other powers, will be constituted within fifteen days from the coming into force of the present treaty, to trace on the spot the frontier line described above. In those parts of the preceding line which do not coincide with administration boundaries, the commission will endeavor to keep to the line indicated, while taking into consideration, so far as is possible, local economic interests and existing communal boundaries.

The decisions of this commission will be taken by a majority and will be binding on the parties concerned.

Article 49.— Germany renounces in favor of the League of Nations, in the capacity of trustee, the government of the territory defined above.

At the end of fifteen years from the coming into force of the present treaty the inhabitants of the said territory shall be called upon to indicate the sovereignty under which they desire to be placed.

Article 50.— The stipulations under which the cession of the mines in the Sarre Basin shall be carried out, together with the measures intended to guarantee the rights and the well-being of the inhabitants and the government of the territory, as well as the conditions in accordance with which the plebiscite hereinbefore provided for is to be made, are laid down in the annex hereto. This annex shall be considered as an integral part of the present treaty, and Germany declares her adherence to it.

ANNEX.

In accordance with the provisions of Articles 45 to 50 of the present treaty, the stipulations under which the cession by Germany to France of the mines of the Sarre Basin will be effected, as well as the measures intended to insure respect for the rights and well-being of the population and the government of the territory, and the conditions in which the inhabitants will be called upon to indicate the sovereignty under which they may wish to be placed, have been laid down as follows:

Chapter I.— Cession and Exploitation of Mining Property.

1. From the date of the coming into force of the present treaty, all the deposits of coal situated within the Sarre Basin, as defined in Article 48 of the said treaty, become the complete and absolute property of the French State.

The French State will have the right of working or not working the said mines or of transferring to a third party the right of working them, without having to obtain any previous authorization or to fulfil any formalities.

The French State may always require that the German mining laws and regulations referred to below shall be applied in order to insure the determination of its rights.

2. The right of ownership of the French State will apply not only to the deposits which are free, and for which concessions have not yet been granted, but also to the deposits for which concessions have already been granted, whoever may be the present proprietors, irrespective of whether they belong to the Prussian State, to the Bavarian State, to other States or bodies, to companies or to individuals, whether they have been worked or not, or whether a right of exploitation distinct from the right of the owners of the surface of the soil has or has not been recognized.

3. As far as concerns the mines which are being worked, the transfer of the ownership to the French State will apply to all the accessories and subsidiaries of the said mines, in particular to their plant and equipment both on and below the surface, to their extracting machinery, their plants for transforming coal into electric power, coke and by-products, their workshops, means of communication, electric lines, plant for catching and distributing water, land, buildings, such as offices, managers', employes', and workmen's dwellings, schools, hospitals, and dispensaries, their stocks and supplies of every description, their archives and plans, and in general everything which those who own or exploit the mines possess or enjoy for the purpose of exploiting the mines and their accessories and subsidiaries.

The transfer will apply also to the debts owing for products delivered before the entry into possession by the French State, and after the signature of the present treaty, and to deposits of money made by customers, whose rights will be guaranteed by the French State.

4. The French State will acquire the property free and clear of all debts and charges. Nevertheless the rights acquired, or in course of being acquired, by the employees of the mines and their accessories and subsidiaries at the date of the coming into force of the present treaty, in connection with pensions for old age or disability, will not be affected. In return, Germany must pay over to the French State a sum representing the actuarial amounts to which the said employes are entitled.

5. The value of the property thus ceded to the French State will be determined by the Reparation Commission referred to in Article 233 of Part VIII (Reparations) of the present treaty.

This value shall be credited to Germany in part payment of the amount due for reparation.

It will be for Germany to indemnify the proprietors or parties concerned, whoever they may be.

6. No tariff shall be established on the German railways and canals which may directly or indirectly discriminate to the prejudice of the transport of the personnel or product of the mines and their accessories or subsidiaries, or of the material necessary to their exploitation. Such transport shall enjoy all the rights and privileges which any international railway conventions may guarantee to similar products of French origin.

7. The equipment and personnel necessary to insure the dispatch and transport of the products of the mines and their accessories and subsidiaries, as well as the carriage of workmen and employes, will be provided by the local railway administration of the basin.

8. No obstacle shall be placed in the way of such improvements of railways or waterways as the French State may judge necessary to assure the dispatch and transport of the products of the mines and their accessories and subsidiaries, such as double trackage, enlargement of stations, and construction of yards and appurtenances.

The distribution of expenses will, in the event of disagreement, be submitted to arbitration.

The French State may also establish any new means of communication, such as roads, electric lines, and telephone connections, which it may consider necessary for the exploitation of the mines.

It may exploit freely and without any restrictions the means of communication of which it may become the owner, particularly those connecting the mines and their accessories and subsidiaries with the means of communication situated in French territory.

9. The French State shall always be entitled to demand the application of the German mining laws and regulations in force on the 11th November, 1918, excepting provisions adopted exclusively in view of the state of war, with a view to the acquisition of such land as it may judge necessary for the exploitation of the mines and their accessories and subsidiaries.

The payment for damage caused to immovable property by the working of the said mines and their accessories and subsidiaries shall be made in accordance with the German mining laws and regulations above referred to.

10. Every person whom the French State may substitute for itself as regards the whole or part of its rights to the exploitation of the mines and their accessories and subsidiaries shall enjoy the benefit of the priviliges provided in this annex.

11. The mines and other immovable property which become the property of the French State may never be made the subject of measures of forfeiture, forced sale, expropriation or requisition, nor of any other measure affecting the right of property.

The personel and the plant connected with the exploitation of these mines or their accessories and subsidiaries, as well as the product extracted from the mines or manufactured in their accessories and subsidiaries, may not at any time be made the subject of any measures of requisition.

12. The exploitation of the mines and their accessories and subsidiaries, which become the property of the French State, will continue, subject to the provisions of Paragraph 23 below, to be subject to the régime established by the German laws and regulations in force on the 11th November, 1918, excepting provisions adopted exclusively in view of the state of war.

The rights of the workmen shall be similarly maintained, subject to the provisions of the said Paragraph 23, as established on the 11th November, 1918, by the German laws and regulations above referred to. No impediment shall be placed in the way of the introduction or employment in the mines and their accessories and subsidiaries of workmen from without the basin.

The employes and workmen of French nationality shall have the right to belong to French labor unions.

13. The amount contributed by the mines and their accessories and subsidiaries, either to the local budget of the territory of the Sarre Basin or to the communal funds, shall be fixed with due regard to the ratio of the value of the mines to the total taxable wealth of the basin.

14. The French State shall always have the right of establishing and maintaining, as incidental to the mines, primary or technical schools for its employes and their children, and of causing instruction therein to be given in the French language, in accordance with such curriculum and by such teachers as it may select.

It shall also have the right to establish and maintain hospitals, dispensaries, workmen's houses and gardens, and other charitable and social institutions.

15. The French State shall enjoy complete liberty with respect to the distribution, dispatch, and sale prices of the products of the mines and their accessories and subsidiaries.

Nevertheless, whatever may be the total product of the mines, the French Government undertakes that the requirements of local consumption for industrial and domestic purposes shall always be satisfied in the proportion existing in 1913 between the amount consumed locally and the total output of the Sarre Basin.

Chapter II.— Government of the Territory of Sarre Basin.

16. The government of the territory of the Sarre Basin shall be intrusted to a commission representing the League of Nations. This commission shall sit in the territory of the Sarre Basin.

17. The Governing Commission provided for by Paragraph 16 shall consist of five members chosen by the Council of the League of Nations, and will include one citizen of France, one native inhabitant of the Sarre Basin not a citizen of France, and three members belonging to three countries other than France or Germany.

The members of the Governing Commission shall be appointed for one year and may be reappointed. They can be removed by the Council of the League of Nations, which will provide for their replacement. The members of the Governing Commission will be entitled to a salary which will be fixed by the Council of the League of Nations, and charged on the local revenues.

18. The Chairman of the Governing Commission shall be appointed for one year from among the members of the commission by the Council of the League of Nations and may be reappointed. The Chairman will act as the executive of the commission.

19. Within the territory of the Sarre Basin the Governing Commission shall have all the powers of government hitherto belonging to the German Empire, Prussia or Bavaria, including the appointment and dismissal of officials, and the creation of such administrative and representative bodies at it may deem necessary. It shall have full powers to administer and operate the railways, canals, and the different public services.

Its decisions shall be taken by a majority.

20. Germany will place at the disposal of the Governing Commission all official documents and archives under the control of Germany, of any German State, or of any local authority, which relate to the territory of the Sarre Basin or to the rights of the inhabitants thereof.

21. It will be the duty of the Governing Commission to insure, by such means and under such conditions as it may deem suitable, the protection abroad of the interests of the inhabitants of the territory of the Sarre Basin.

22. The Governing Commission shall have the full right of user of all property, other than mines, belonging, both in public and in private domain, to the Imperial German Government, or the Government of any German State, in the territory of the Sarre Basin.

As regards the railways, an equitable apportionment of rolling stock shall be made by a mixed commission on which the government of the territory of the Sarre Basin and the German railways will be represented.

Persons, goods, vessels, carriages, wagons, and mails, coming from or going to the Sarre Basin, shall enjoy all the rights and privileges relating to transit and transport which are specified in the provisions of Part XII (ports, waterways, railways) of the present treaty.

23. The laws and regulations in force on November 11, 1918, in the territory of the Sarre Basin, (except those enacted in consequence of the state of war,) shall continue to apply. If, for general reasons or to bring these laws and regulations into accord with the provisions of the present treaty, it is necessary to introduce modifications, these shall be decided on, and put into effect by the Governing Commission, after consultation with the elected representatives of the inhabitants in such a manner as the commission may determine. No modification may be made in the legal régime for the exploitation of the mines, provided for in Paragraph 12, without the French State being previously consulted, unless such modification results from a general regulation respecting labor adopted by the League of Nations.

In fixing the conditions and hours of labor for men, women, and children, the Governing Commission is to take into consideration the wishes expressed by the local labor organizations, as well as the principles adopted by the League of Nations.

24. Subject to the provisions of Paragraph 4, no rights of the inhabitants of the Sarre Basin acquired or in process of acquisition at the date of the coming into force of this treaty, in respect of any insurance system of Germany, or in respect of any pension of any kind, are affected by any of the provisions of the present treaty.

Germany and the Government of the territory of the Sarre Basin will preserve and continue all of the aforesaid rights.

25. The civil and criminal courts existing in the territory of the Sarre Basin shall continue.

A civil and criminal court will be established by the Governing Commission to hear appeals from the decisions of the said courts, and to decide matters for which these courts are not competent.

The Governing Commission will be responsible for settling the organization and jurisdiction of the said court.

Justice will be rendered in the name of the Governing Commission.

26. The Governing Commission will alone have the power of levying taxes and dues in the territory of the Sarre Basin.

These taxes and dues will be exclusively applied to the needs of the territory.

The fiscal system existing on November 11, 1918, will be maintained as far as possible, and no new tax except customs duties may be imposed without previously consulting the elected representatives of the inhabitants.

27. The present stipulations will not effect the existing nationality of the inhabitants of the territory of the Sarre Basin. No hindrance shall be placed in the way of those who wish to acquire a different nationality, but in such case the acquisition of the new nationality will involve the loss of any other.

28. Under the control of the Governing Commission the inhabitants will retain their local assemblies, their religious liberties, their schools, and their language. The right of voting will not be exercised for any assemblies other than the local assemblies, and will belong to every inhabitant over the age of 20 years without distinction of sex.

29. Any of the inhabitants of the Sarre Basin who may desire to leave the territory will have full liberty to retain in it their immovable property or to sell it at fair prices and to remove their movable property free of any charges.

30. There will be no military service, whether compulsory or voluntary, in the territory of the Sarre Basin, and the construction of fortifications therein is forbidden. Only a local gendarmerie for the maintenance of order may be established. It will be the duty of the Governing Commission to provide in all cases for the protection of persons and property in the Sarre Basin.

31. The territory of the Sarre Basin as defined by Article 48 of the present treaty shall be subjected to the French customs régime. The receipts from the customs duties on goods intended for local consumption shall be included in the budget of the said territory after deduction of all costs of collection. No export tax shall be imposed upon metallurgical products of coal exported from the said territory to Germany, nor upon German exports for the use of the industries of the territory of the Sarre Basin. Natural or manufactured products originating in the basin in transit over German territory and similarly German products in transit over the territory of the basin shall be free of all customs duties.

Products which both originate in and pass from the basin into Germany shall be free of import duties for a period of five years from the date of the coming into force of the present treaty, and during the same period articles imported from Germany into the territory of the basin for local consumption shall likewise be free of import duties.

During these five years the French Government reserves to itself the right of limiting to the annual average of the quantities imported into Alsace-Lorraine and France in the years 1911 to 1913 the quantities which may be sent into France of all articles coming from the basis, which include raw materials and semi-manufactured goods imported duty free from Germany. Such average shall be determined after reference to all available official information and statistics.

32. No prohibition or restriction shall be imposed upon the circulation of French money in the territory of the Sarre Basin. The French State shall have the right to use French money in all purchases, payments, and contracts connected with the exploitation of the mines or their accessories and subsidiaries.

33. The Governing Commission shall have power to decide all questions arising from the interpretation of the preceding provisions. France and Germany agree that any dispute involving a difference of opinion as to the interpretation of the said provisions shall in the same way be submitted to the Governing Commission, and the decision of a majority of the commission shall be binding on both countries.

Chapter III.— Plebiscite.

34. At the termination of a period of fifteen years from the coming into force of the present treaty, the population of the territory of the Sarre Basin will be called upon to indicate their desires in the following manner:

A vote will take place, by communes or districts, on the three following alternatives: (a) Maintenance of the régime established by the present treaty and by this annex; (b) union with France; (c) union with Germany.

All persons without distinction of sex, more than 20 years old at the date of the voting, resident in the territory at the date of the signature of the present treaty, will have the right to vote.

The other conditions, methods, and the date of the voting shall be fixed by the Council of the League of Nations in such a way as to secure the liberty, secrecy, and trustworthiness of the voting.

35. The League of Nations shall decide on the sovereignty under which the territory is to be placed, taking into account the wishes of the inhabitants as expressed by the voting.

(a) If, for the whole or part of the territory, the League of Nations decides in favor of the maintenance of the régime established by the present treaty and this annex, Germany hereby agrees to make such renunciation of her sovereignty in favor of the League of Nations as the latter shall deem necessary. It will be the duty of the League of Nations to take appropriate steps to adapt the régime definitely adopted to the permanent welfare of the territory and the general interests.

(b) If for the whole or part of the territory the League of Nations decides in favor of union with France, Germany hereby agrees to cede to France in accordance with the decision of the League of Nations all rights and title over the territory specified by the League.

(c) If for the whole or part of the territory the League of Nations decides in favor of union with Germany, it will be the duty of the League of Nations to cause the German Government to be re-established in the government of the territory specified by the League.

36. If the League of Nations decides in favor of the union of the whole or part of the territory of the Sarre Basin with Germany, France's rights of ownership in the mines situated in such part of the territory will be repurchased by Germany in their entirety at a price payable in gold. The price to be paid will be fixed by three experts, one nominated by Germany, one by France, and one, who shall be neither a Frenchman nor a German, by the Council of the League of Nations. The decision of the experts will be given by a majority.

The obligation of Germany to make such payment shall be taken into account by the Reparation Commission, and for the purpose of this payment Germany may create a prior charge upon her assets or revenues upon such detailed terms as shall be agreed to by the Reparation Commission.

If, nevertheless, Germany after a period of one year from the date on which the payment becomes due shall not have effected the said payment, the Reparation Commission shall do so in accordance with such instructions as may be given by the League of Nations, and, if necessary, by liquidating that part of the mines which is in question.

37. If, in consequence of the repurchase provided for in Paragraph 36, the ownership of the mines or any part of them is transferred to Germany, the French State and French nationals shall have the right to purchase such amount of coal of the Sarre Basin as their industrial and domestic needs are found at that time to require. An equitable arrangement regarding amounts of coal, duration of contract, and prices will be fixed in due time by the Council of the League of Nations.

38. It is understood that France and Germany may, by special agreements concluded before the time fixed for the payment of the price for the repurchase of the mines, modify the provisions of Paragraphs 36 and 37.

39. The Council of the League of Nations shall make such provisions as may be necessary for the establishment of the régime which is to take effect after the decisions of the League of Nations mentioned in Paragraph 35 have become operative, including an equitable apportionment of any obligations of the Government of the territory of the Sarre Basin arising from loans raised by the commission or from other causes.

From the coming into force of the new régime, the powers of the Governing Commission will terminate, except in the case provided for in Paragraph 35. (a)

40. In all matters dealt with in the present annex, the decisions of the Council of the League of Nations will be taken by a majority.

SECTION V.—ALSACE-LORRAINE.

The high contracting powers, recognizing the moral obligation to redress the wrong done by Germany in 1871, both to the rights of France and to the wishes of the population of Alsace and Lorraine, which were separated from their country in spite of solemn protests of their representatives at the Assembly of Bordeaux, agree upon the following articles:

Article 51.— The territories which were ceded to Germany in accordance with the preliminaries of peace

signed at Versailles on the 26th February, 1871, and the treaty of Frankfort on the 10th May, 1871, are restored to French sovereignty as from the date of the armistice of the 11th November, 1918.

The provisions of the treaties establishing the delimination of the frontiers before 1871 shall be restored.

Article 52.— The German Government shall hand over without delay to the French Government all archives, registers, plans, titles, and documents of every kind concerning the civil, military, financial, judicial, or other administrations of the territories restored to French sovereignty. If any of these documents, archives, registers, titles, or plans have been misplaced, they will be restored by the German Government on the demand of the French Government.

Article 53.— Separate agreements shall be made between France and Germany dealing with the interests of the inhabitants of the territories referred to in Article 51, particularly as regards their civil rights, their business and the exercise of their professions, it being understood that Germany undertakes as from the present date to recognize and accept the regulations laid down in the annex hereto regarding the nationality of the inhabitants or natives of the said territories, not to claim at any time or in any place whatsoever as German nationals those who shall have been declared on any ground to be French, to receive all others in her territory, and to conform, as regards the property of German nationals in the territories indicated in Article 51, with the provisions of Article 297, and the Annex to Section 4 of Part X (economic clauses) of the present treaty.

Those German nationals who without acquiring French nationality shall receive permission from the French Government to reside in the said territories shall not be subjected to the provisions of the said article.

Article 54.— Those persons who have regained French nationality in virtue of Paragraph 1 of the annex hereto, will be held to be Alsace-Lorrainers for the purposes of the present section.

The persons referred to in Paragraph 2 of the said annex will, from the day on which they have claimed French nationality, be held to be Alsace-Lorrainers with retroactive effect as from the 11th November, 1918. From those whose application is rejected, the privilege will terminate at the date of the refusal.

Such juridical persons will also have the status of Alsace-Lorrainers as have been recognized as possessing this quality, whether by the French administrative authorities or by a judicial decision.

Article 55.— The territories referred to in Article 51 shall return to France, free and quit of all public debts under the conditions laid down in Article 255 of Part IX (financial clauses) of the present treaty.

Article 56.— In conformity with the provisions of Article 256 of Part IX (financial clauses) of the present treaty, France shall enter into possession of all property and estate within the territories referred to in Article 51, which belong to the German Empire or German States, without any payment or credit on this account to any of the States ceding the territories.

This provision applies to all movable or immovable property of public or private domain, together with all rights whatsoever belonging to the German Empire or the German States or to their administrative areas.

Crown property and the property of the former Emperor or other German sovereigns shall be assimilated to property of the public domain.

Article 57.— Germany shall not take any action either by means of stamping or by any other legal or administrative measures not applying equally to the rest of her territory, which may be to the detriment of the legal value or redeemability of German monetary instruments or moneys which at the date of the signature of the present treaty are legally current, and at that date are in the possession of the French Government.

Article 58.— A special convention will determine the conditions for repayment in marks of the exceptional war expenditure advanced during the course of the war by Alsace-Lorraine or by public bodies in Alsace-Lorraine on account of the empire in accordance with German law, such as payment to the families of persons mobilized, requisitions, billeting of troops, and assistance to persons who have been expelled. In fixing the amount of these sums Germany shall be credited with that portion which Alsace-Lorraine would have contributed to the empire to meet the expenses resulting from these payments, this contribution being calculated according to the proportion of the imperial revenues derived from Alsace-Lorraine in 1913.

Article 59.— The French Government will collect for its own account the imperial taxes, duties, and dues of every kind leviable in the territories referred to in Article 51 and not collected at the time of the armistice of the 11th November, 1918.

Article 60.— The German Government shall without delay restore to Alsace-Lorrainers, (individuals, juridical persons, and public institutions,) all property, rights, and interests belonging to them on the 11th November, 1918, in so far as these are situated in German territory.

Article 61.— The German Government undertakes to continue and complete without delay the execution of the financial clauses regarding Alsace-Lorraine contained in the armistice conventions.

Article 62.— The German Government undertakes to bear the expense of all civil and military pensions which had been earned in Alsace-Lorraine on the date of the 11th November, 1918, and the maintenance of which was a charge on the budget of the German Empire.

The German Government shall furnish each year the funds necessary for the payment in francs, at the average rate of exchange for that year, of the sums in marks to which persons resident in Alsace-Lorraine would have been entitled if Alsace-Lorraine had remained under German jurisdiction.

Article 63.— For the purposes of the obligation assumed by Germany in Part VIII (reparations) of the present treaty to give compensation for damages caused to the civil populations of the Allied and Associated countries in the form of fines, the inhabitants of the territories referred to in Article 51 shall be assimilated to the above mentioned populations.

Article 64.— The regulations concerning the control of the Rhine and of the Moselle are laid down in Part XII (ports, waterways, and railways) of the present treaty.

Article 65.— Within a period of three weeks after the coming into force of the present treaty the Port of Strasbourg and the Port of Kehl shall be constituted, for a period of seven years, a single unit from the point of view of exploitation.

The administration of this single unit will be carried on by a manager named by the Central Rhine Commission, which shall also have power to remove him. He shall be of French nationality. He will reside in Strasbourg and will be subject to the supervision of the Central Rhine Commission.

There will be established in the two ports free zones in conformity with Part XII (ports, waterways, and railways) of the present treaty.

A special convention between France and Germany, which shall be submitted to the approval of the Central Rhine Commission, will fix the details of this organization, particularly as regards finance.

It is understood that for the purpose of the present article the Port of Kehl includes the whole of the area necessary for the movements of the port and the trains which serve it, including the harbor, quays and railroads, platforms, cranes, sheds and warehouses, silos, elevators and hydro-electric plants, which make up the equipment of the port.

The German Government undertakes to carry out all measures which shall be required of it in order to assure that all the making up and switching of trains arriving at or departing from Kehl, whether for the right bank or the left bank of the Rhine, shall be carried on in the best conditions possible.

All property rights shall be safeguarded. In particular, the administration of the ports shall not prejudice any property rights of the French or Baden railroads.

Equality of treatment as respects traffic shall be assured in both ports to the nationals, vessels, and goods of every country.

In case at the end of the sixth year France shall consider that the progress made in the improvement of the Port of Strasbourg still requires a prolongation of this temporary régime, she may ask for such prolongation from the Central Rhine Commission, which may grant an extension for a period not exceeding three years.

Throughout the whole period of any such extension the free zones above provided for shall be maintained.

Pending appointment of the first manager by the Central Rhine Commission, a provisional manager, who shall be of French nationality, may be appointed by the principal Allied and Associated Powers, subject to the foregoing provisions.

For all purposes of the present article the Central Rhine Commission will decide by a majority of votes.

Article 66.— The railway and other bridges across the Rhine now existing within the limits of Alsace-Lorraine shall, as to all their parts and their whole

length, be the property of the French State, which shall insure their upkeep.

Article 67.— The French Government is substituted in all the rights of the German Empire over all the railways which were administered by the Imperial Railway Administration, and which are actually working or under construction.

The same shall apply to the rights of the empire with regard to railway and tramway concessions within the territories referred to in Article 51.

This substitution shall not entail any payment on the part of the French State.

The frontier railway stations shall be established by a subsequent agreement, it being stipulated in advance that on the Rhine frontier they shall be situated on the right bank.

Article 68.— In accordance with the provisions of Article 268 of Chapter I of Section I of Part X (economic clauses) of the present treaty, for a period of five years from the coming into force of the present treaty, natural or manufactured products originating in and coming from the territories referred to in Article 51 shall, on importation into German customs territory, be exempt from all customs duty. The French Government shall fix each year, by decree communicated to the German Government, the nature and amount of the products which shall enjoy this exemption.

The amount of each product which may be thus sent annually into Germany shall not exceed the average of the amount sent annually in the years 1911–1913.

Further, during the period of five years above mentioned, the German Government shall allow the free export from Germany and the free reimportation into Germany, exempt from all customs duties and other charges, (including internal charges,) of yarns, tissues, and other textile materials or textile products of any kind, and in any condition, sent from Germany into the territories referred to in Article 51, to be subjected there to any finishing process, such as bleaching, dyeing, printing, mercerization, gassing, twisting, or dressing.

Article 69.— During a period of ten years from the coming into force of the present treaty, central electric supply works situated in German territory, and formerly furnishing electric power to the territories referred to in Article 51, or to any establishment the working of which passes permanently or temporarily from Germany to France, shall be required to continue such supply up to the amount of consumption corresponding to the undertakings and contracts current on the 11th November, 1918.

Such supply shall be furnished according to the contracts in force and at a rate which shall not be higher than that paid to the said works by German nationals.

Article 70.— It is understood that the French Government preserves its right to prohibit in the future in the territories referred to in Article 51 all new German participation:

1. In the management or exploitation of the public domain and of public services, such as railways, navigable waterways, water works, gas works, electric power, etc.

2. In the ownership of mines and quarries of every kind and in enterprises connected therewith;

3. In metallurgical establishments, even though their working may not be connected with that of any mine.

Article 71.— As regards the territories referred to in Article 51, Germany renounces on behalf of herself and her nationals as from 11th November, 1918, all rights under the law of the 25th May, 1910, regarding the trade in potash salts and generally under any stipulations for the intervention of German organizations in the working of the potash mines. Similarly she renounces on behalf of herself and her nationals all rights under any agreements, stipulations or laws, which may exist to her benefit with regard to other products of the aforesaid territories.

Article 72.— The settlement of the questions relating to debts contracted before the 11th November, 1918, between the German Empire and the German States or their nationals residing in Germany on the one part, and Alsace-Lorrainers residing in Alsace-Lorraine on the other part, shall be effected in accordance with the provisions of Section III of Part X (economic clauses) of the present treaty, the expression "before the war" therein being replaced by the expression "before the 11th November, 1918." The rate of exchange applicable in the case of such settlement shall be the average rate quoted on the Geneva Exchange during the month preceding the 11th November, 1918. There may be established in the territories referred to in Article 51, for the settlement of the aforesaid debts under the conditions laid down in Section III of Part X (economic clauses) of the present treaty, a special clearing office, it being understood that this office shall be regarded as a "central office" under the provisions of Paragraph 1 of the annex to the said section.

Article 73.— The private property rights and interests of Alsace-Lorrainers in Germany will be regulated by the stipulations of Section IV of Part X (economic clauses) of the present treaty.

Article 74.— The French Government reserves the right to retain and liquidate all the property, rights and interests which German nationals or societies controlled by Germany possessed in the territories referred to in Article 51 on Nov. 11, 1918, subject to the conditions laid down in the last paragraph of Article 53 above.

Germany will directly compensate its nationals who may have been dispossessed by the aforesaid liquidations.

The product of these liquidations shall be applied in accordance with the stipulations of Sections III and IV of Part X (economic clauses) of the present treaty.

Article 75.— Notwithstanding the stipulations of Section V of Part X (economic clauses) of the present treaty, all contracts made before the date of the promulgation in Alsace-Lorraine of the French decree of 30th November, 1918, between Alsace-Lorrainers (whether individuals or juridical persons) or others resident in Alsace-Lorraine on the one part, and the German Empire or German States and their nationals resident in Germany on the other part, the execution of which has been suspended by the armistice or by subsequent French legislation, shall be maintained.

Nevertheless, any contract of which the French Government shall notify the cancellation to Germany in the general interest within a period of six months from the date of the coming into force of the present treaty shall be annulled except in respect of any debt or other pecuniary obligation arising out of any act done or money paid thereunder before the 11th November, 1918. If this dissolution would cause one of the parties substantial prejudice, equitable compensation, calculated solely on the capital employed without taking account of loss of profits, shall be accorded to the prejudiced party.

With regard to prescriptions, limitations, and forfeitures in Alsace-Lorraine, the provisions of Articles 300 and 301 of Section V, Part X (economic clauses) shall be applied, with the substitution for the expression "outbreak of war" of the expression "11th November, 1918," and for the expression "duration of the war" of the expression "period from the 11th November, 1918, to date of the coming into force of the present treaty."

Article 76.— Questions concerning rights in industrial, literary, or artistic property of Alsace-Lorrainers shall be regulated in accordance with the general stipulations of Section VII of Part X (economic clauses) of the present treaty, it being understood that Alsace-Lorrainers holding rights of this nature under German legislation will preserve full and entire enjoyment of those rights on German territory.

Article 77.— The German Government undertakes to pay over to the French Government such proportion of all reserves accumulated by the empire or by public or private bodies dependent upon it, for the purposes of disability and old age insurance, as would fall to the disability and old age insurance fund at Strasbourg.

The same shall apply in respect of the capital and reserves accumulated in Germany falling legitimately to other serial insurance funds, to miners' superannuation funds, to the fund of the railways of Alsace-Lorraine, to other superannuation organizations established for the benefit of the personnel of public administrations and institutions operating in Alsace-Lorraine, and also in respect of the capital and reserves due by the insurance fund of private employes at Berlin by reason of engagements entered into for the benefit of insured persons of that category resident in Alsace-Lorraine.

A special convention shall determine the conditions and procedure of these transfers.

Article 78.— With regard to the execution of judgments, orders, and prosecutions, the following rules shall be applied:

1. All civil and commercial judgments which shall have been given since Aug. 3, 1914, by the courts of Alsace-Lorraine between Alsace-Lorrainers, or between Alsace-Lorrainers and foreigners, or between foreigners, and which shall not have been appealed from before the 11th November, 1918, shall be regarded as final and capable of being fully executed.

When the judgment has been given between Alsace-Lorrainers and Germans, or between Alsace-Lorrainers and subjects of the allies of Germany, it shall only be capable of execution after the issue of an exequatur by the corresponding new tribunal in the restored territory referred to in Article 51.

2. All judgments given by German courts since the 3d August, 1914, against Alsace-Lorrainers for political

crimes or misdemeanors shall be regarded as null and void.

3. All sentences passed since the 11th November, 1918, by the Imperial Court of Leipzig on Appeals against the decisions of the courts of Alsace-Lorraine shall be regarded as null and void and shall be so pronounced. The papers in regard to the cases in which such sentences have been given shall be returned to the courts of Alsace-Lorraine concerned.

All appeals to the Imperial Court against decisions of the courts of Alsace-Lorraine shall be suspended. In the cases referred to above, the papers shall be returned under the aforesaid conditions for transfer without delay to the French Cour de Cassation which shall be competent to decide them.

4. All prosecutions of Alsace-Lorraine for offenses committed during the period between the 11th November, 1918, and the coming into force of the present treaty will be conducted under German law except in so far as this has been modified by decrees duly published on the spot by the French authorities.

All other questions as to competence, procedure or administration of justice, shall be determined by a special convention between France and Germany.

Article 79.— The stipulations as to nationality contained in the annex hereto shall be considered as of equal force with the provisions of the present section.

All other questions concerning Alsace-Lorraine which are not regulated by the present section and the annex thereto, or by the general provisions of the present treaty, will form the subject of further conventions between France and Germany.

ANNEX.

1. As from the 11th November, 1918, the following persons are ipso facto reinstated in French nationality:

First.— Persons who lost French nationality by the application of the Franco-German treaty of the 10th May, 1871, and who have not since that date acquired any nationality other than German;

Second.— The legitimate or natural descendants of the persons referred to in the immediate preceding paragraph, with the exception of those whose descendants in the paternal line include a German who migrated into Alsace-Lorraine after the 15th July, 1870;

Third.— All persons born in Alsace-Lorraine of unknown parents or whose nationality is unknown.

2. Within the period of one year from the coming into force of the present treaty, persons included in any of the following categories may claim French nationality:

First.— All persons not restored to French nationality under Paragraph 1, above, whose ascendants include a Frenchman or French woman who lost French nationality under the conditions referred to in the said paragraph:

Second.— All foreigners not nationals of a German State who acquired the status of a citizen of Alsace-Lorraine before the 3d August, 1914;

Third.—All Germans domiciled in Alsace-Lorraine, if they have been so domiciled since a date previous to 15th July, 1870, or if one of their ascendants was at that date domiciled in Alsace-Lorraine;

Fourth.— All Germans born or domiciled in Alsace-Lorraine who have served in the allied or associated armies during the present war and their descendants;

Fifth.— All persons born in Alsace-Lorraine before 10th May, 1871, of foreign parents, and the descendants of such persons;

Sixth.— The husband or wife of any person whose French nationality may have been restored under Paragraph 1 or who may have claimed and obtained French nationality in accordance with the preceding provisions.

The legal representatives of a minor may exercise on behalf of that minor the right to claim French nationality; and if that right has not been exercised, the minor may claim French nationality within the year following his majority.

Except in the case provided in No. 6 of the present paragraph, the French authorities reserve to themselves the right in individual cases to reject the claim to French nationality.

3. Subject to the provisions of Paragraph 2, Germans born or domiciled in Alsace-Lorraine shall not acquire French nationality by reason of the restoration of Alsace-Lorraine to France, even though they may have the status of citizens of Alsace-Lorraine.

They may acquire French nationality only by naturalization, on condition of having been domiciled in Alsace-Lorraine from a date previous to the 3d August, 1914, and of submitting proof of unbroken residence within the restored territory for a period of three years from the 11th November, 1918.

France will be solely responsible for their diplomatic and consular protection from the date of their application for French naturalization.

4. The French Government shall determine the procedure by which reinstatement in French nationality as of right shall be effected, and the conditions under which decisions shall be given upon claims to such nationality and applications for naturalization, as provided by the present annex.

SECTION VI.—AUSTRIA.

Article 80.— Germany acknowledges and will respect strictly the independence of Austria. Within the frontiers which may be fixed by a treaty between that State and the principal Allied and Associated Powers she agrees that the independence shall be inalienable, except with the consent of the Council of the League of Nations.

SECTION VII.— CZECHOSLOVAK STATE.

Article 81.— Germany, in conformity with the action already taken by the Allied and Associated Powers, recognizes the complete independence of the Czechoslovak State, which will include the autonomous territory of the Ruthenians to the south of the Carpathians. Germany hereby recognizes the frontier of this State as determined by the principal Allied and Associated Powers and the other interested States.

Article 82.— The old frontier as it existed on Aug. 3, 1914, between Austria-Hungary and the German Empire will constitute the frontier between Germany and the Czechoslovak State.

Article 83.— Germany renounces in favor of the Czechoslovak State all rights and title over the portion of Silesian territory defined as follows:

Starting from a point about 2 kilometers southeast of Katscher, on the boundary between the Circles (Kreise) of Loebschütz and Ratibor: the boundary between the two Kreise; then, the former boundary between Germany and Austria-Hungary up to a point on the Oder immediately to the south of the Ratibor-Oderberg railway; thence, toward the northwest and up to a point about 2 kilometers to the southeast of Katscher: a line to be fixed on the spot passing to the west of Kranowitz.

A commission composed of seven members, five nominated by the Principal Allied and Associated Powers, one by Poland, and one by the Czechoslovak State, will be appointed fifteen days after the coming into force of the present treaty to trace on the spot the frontier line between Poland and the Czechoslovak State.

The decisions of this commission will be taken by a majority and shall be binding on the parties concerned.

Germany hereby agrees to renounce in favor of the Czechoslovak State all rights and title over the part of the Kreis of Loebschütz comprised within the following boundaries in case after the determination of the frontier between Germany and Poland the said part of that circle should become isolated from Germany: from the southeastern extremity of the salient of the former Austrian frontier at about 5 kilometers to the west of Loebschütz southward and up to a point of junction with the boundary between the Kreise of Loebschütz and Ratibor: the former frontier between Germany and Austria-Hungary; then, northward, the administrative boundary between the Kreise of Loebschütz and Ratibor up to a point situated about 2 kilometers to the southeast of Katscher; thence, northwestward and up to the starting point of this definition: a line to be fixed on the spot passing to the east of Katscher.

Article 84.— German nationals habitually resident in any of the territories recognized as forming part of the Czechoslovak State will obtain Czechoslovak nationality ipso facto and lose their German nationality.

Article 85.— Within a period of two years from the coming into force of the present treaty German nationals over 18 years of age habitually resident in any of the territories recognized as forming part of the Czechoslovak State will be entitled to opt for German nationality. Czechoslovaks who are habitually resident in Germany will have a similar right to opt for Czechoslovak nationality.

Option by a husband will cover his wife, and option by parents will cover their children under 18 years of age. Persons who have exercised the above right to opt must within the succeeding twelve months transfer their place of residence to the State for which they have opted. They will be entitled to retain their landed property in the territory of the other State where they had their place of residence before exercising the right to opt. They may carry with them their movable property of every description. No export or import duties may be imposed upon them in connection with the re-

moval of such property. Within the same period Czechoslovaks who are German nationals and are in a foreign country will be entitled, in the absence of any provisions to the contrary in the foreign law, and if they have not acquired the foreign nationality, to obtain Czechoslovak nationality and lose their German nationality by complying with the requirements laid down by the Czechoslovak State.

Article 86.— The Czechoslovak State accepts and agrees to embody in a treaty with the principal Allied and Associated Powers such provisions as may be deemed necessary by the said powers to protect the interests of inhabitants of that State who differ from the majority of the population in race, language or religion.

The Czechoslovak State further accepts and agrees to embody in a treaty with the said powers such provisions as they may deem necessary to protect freedom of transit and equitable treatment of the commerce of other nations.

The proportion and nature of the financial obligations of Germany and Prussia which the Czechoslovak State will have to assume on account of the Silesian territory placed under its sovereignty will be determined in accordance with Article 254 of Part IX (financial clauses) of the present treaty.

Subsequent agreements will decide all questions not decided by the present treaty which may arise in consequence of the cession of the said territory.

SECTION VIII.— POLAND.

Article 87.— Germany, in conformity with the action already taken by the Allied and Associated Powers, recognizes the complete independence of Poland and renounces in her favor all rights and title over the territory bounded by the Baltic Sea; the eastern frontier of Germany as laid down in Article 27 of Part II (boundaries of Germany) of the present treaty, up to a point situated about two kilometers to the east of Lorzendorf, then a line to the acute angle which the northern boundary of Upper Silesia makes about three kilometers northwest of Simmenau, then to where the boundary of Upper Silesia has its meeting point with the old frontier between Germany and Russia, then this frontier to the point where it crosses the course of the Niemen, and then the northern frontier of East Prussia, as laid down in Article 28, Part II, aforesaid.

The terms of this article do not, however, apply to the territories of East Prussia and the free city of Danzig, as defined in Article 28, of Part II (boundaries of Germany,) and in Article 100 of Section XI (Danzig) of this part.

The boundaries of Poland not laid down in the present treaty will be subsequently determined by the principal Allied and Associated Powers. A commission consisting of seven members, five of whom shall be nominated by the principal Allied and Associated Powers, one by Germany, and one by Poland, shall be constituted fifteen days after the coming into force of the present treaty to delimit on the spot the frontier line between Poland and Germany. The decision of the commission will be taken by a majority of votes and shall be binding upon the parties concerned.

Article 88.— In the portion of Upper Silesia included within the boundaries described below the inhabitants will be called upon to indicate by a vote whether they wish to be attached to Germany or to Poland:

Starting from the northern point of the salient of the old province of Austrian Silesia, situated about eight kilometers east of Neustadt, the former frontier between Germany and Austria, to its junction with the boundary between the Kreise of Loebschütz and Ratibor; thence in a northerly direction to a point about two kilometers southeast of Katscher; the boundary between the Kreise of Loebschütz and Ratibor; thence in a southeasterly direction to a point on the course of the Oder immediately south of the Ratibor-Oderberg railway: a line to be fixed on the ground passing south of Karanowitz;

Thence the old boundary between Germany and Austria, thence the old boundary between Germany and Russia to its junction with the administrative boundary between Posnania and Upper Silesia; thence this administrative boundary to its junction with the administrative boundary between Upper and Middle Silesia; thence westward to the point where the administrative boundary turns in an acute angle to the southwest about three kilometers northwest of Simmenau;

The boundary between Upper and Middle Silesia; thence in a westerly direction to a point to be fixed on the ground about two kilometers east of Orzendorf; a line to be fixed on the ground passing north of Kein Hennersdorf; thence southward to the point where the boundary between Upper and Middle Silesia cuts the Stadtel-Karlsruhe road: a line to be fixed on the ground passing west of Hennersdorf, Polkowitz, Noldau, Steamersdorf and Dammer, and east of Strehlitz, Nassadel, Eckersdorf, Schwirz, and Stadtel; thence the boundary between Upper and Middle Silesia to its junction with the eastern boundary of the Kreis of Falkenberg; thence the eastern boundary of the Kreis of Falkenberg to the point of the salient which is three kilometers east of Puschine; thence to the northern point of the salient of the old province of Austrian Silesia, situated about eight kilometers east of Neustadt: a line to be fixed on the ground, passing east of Zulls.

The régime under which this plebiscite will be taken and given effect to is laid down in the annex hereto.

The Polish and German Governments hereby respectively bind themselves to conduct no prosecutions on any part of their territory and to take no exceptional proceedings for any political action performed in Upper Silesia during the period of the régime laid down in the annex hereto, and up to the settlement of the final status of the country Germany hereby renounces in favor of Poland all rights and title over the portion of Upper Silesia lying beyond the frontier line fixed by the principal Allied and Associated Powers as this result of the plebiscite.

ANNEX.

1. Within fifteen days from the coming into force of the present treaty the German troops and such officials as may be designated by the commission set up under the provisions of Paragraph 2 shall evacuate the plebiscite area. Up to the moment of the completion of the evacuation they shall refrain from any form of requisitioning in money or in kind and from all acts likely to prejudice the material interest of the country.

Within the same period the workmen's and soldiers' councils which have been constituted in this area shall be dissolved. Members of such councils who are natives of another region and are exercising their functions at the date of the coming into force of the present treaty, or who have gone out of office since the 1st March, 1919, shall be evacuated.

All military and semi-military unions formed in the said area by the inhabitants of the district shall be immediately disbanded. All members of such military organizations who are not domiciled in the said area shall be required to leave it.

2. The plebiscite area shall be immediately placed under the authority of an international commission of four members to be designated by the following powers: The United States of America, France, the British Empire, and Italy. It shall be occupied by troops belonging to the Allied and Associated Powers, and the German Government undertakes to give facilities for the transference of troops to Upper Silesia.

3. The commission shall enjoy all the powers exercised by the German or by the Prussian Government; except those of legislation or taxation. It shall also be substituted for the Government of the Province and the Regierungbezirk.

It shall be within the competence of the commission to interpret the powers hereby conferred upon it, and to determine to what extent it shall exercise them and to what extent they shall be left in the hands of the existing authorities.

Changes in the existing laws and the existing taxation shall only be brought into force with the consent of the commission.

The commission will maintain order with the help of the troops which will be at its disposal and to the extent which it may deem necessary by means of gendarmerie recruited among the inhabitants of the country. The commission shall provide immediately for the replacement of the evacuated German officials, and, if occasion arises, shall itself order the evacuation of such authorities and proceed to the replacement of such local authorities as may be required. It shall take all steps which it thinks proper to insure the freedom, fairness, and secrecy of the vote. In particular, it shall have the right to order the expulsion of any person who may in any way have attempted to distort the result of the plebiscite by methods of corruption or intimidation.

The commission shall have full power to settle all questions arising from the execution of the present clauses. It shall be assisted by technical advisers, chosen by it from among the local populations. The decision of the commission shall be taken by a majority vote.

4. The vote shall take place at such date as may be determined by the principal Allied and Associated

Powers, but not sooner than six months or later than eighteen months after the establishment of the commission in the area.

The right to vote shall be given to all persons, without distinction of sex, who:

(a) Have completed their twentieth year on the 1st of January of the year in which the plebiscite takes place;

(b) Were born in the plebiscite area or have been domiciled there since a date to be determined by the commission, which shall not be subsequent to Jan. 1, 1919, or who have been expelled by the German authorities and have not retained their domicile there.

Persons convicted of political offenses shall not exercise their right of voting. Every person will vote in the commune where he is domiciled, or in which he was born, if he has not retained his domicile in the area.

The result of the vote will be determined by the communes according to the majority of votes in each commune.

5. On the conclusion of the voting the number of votes cast in each commune will be communicated by the commission to the principal Allied and Associated Powers with a full report as to the taking of the vote and a recommendation as to the line which ought to be adopted as the frontier of Germany in Upper Silesia. In this recommendation regard will be paid to the wishes of the inhabitants, as shown by the vote, and to the geographical and economic conditions of the locality.

6. As soon as the frontier has been fixed by the prinicipal Allied and Associated Powers the German authorities will be notified by the International Commission that they are free to take over the administration of the territory which it is recognized should be German; the said authorities must proceed to do so within one month of such notification and in the manner prescribed by the commission. Within the same period and in the manner prescribed by the commission, the Polish Government must proceed to take over the administration of the territory which it is recognized should be Polish.

When the administration of the territory has been provided for by the German and Polish authorities respectively the powers of the commission will terminate.

The cost of the Army of Occupation and expenditure by the commission, whether in discharge of its own functions or in the administration of the territory, will be a charge on the area.

Article 89.— Poland undertakes to accord freedom of transit to persons, goods, vessels, carriages, wagons, and mails in transit between East Prussia and the rest of Germany over Polish territory, including territorial waters, and to treat them at least as favorably as the persons, goods, vessels, carriages, wagons, and mails, respectively, of Polish or of any other most-favored nationality, origin, importation starting point, or ownership, as regards facilities, restrictions, and all other matters.

Goods in transit shall be exempt from all customs or other similar duties.

Freedom of transit will extend to telegraphic and telephonic services under the conditions laid down by the conventions referred to in Article 98.

Article 90.— Poland undertakes to permit, for a period of fifteen years, the exportation to Germany of the products of the mines in any part of Poland in accordance with the present treaty. Such export shall be subject to duties or other changes or restrictions on exportation.

Poland agrees to take such steps as may be necessary to secure that such products shall be available for sale to purchasers in Germany on terms as favorable as are applicable to like products sold under similar conditions to purchasers in Poland or in any other country.

Article 91.— German nationals habitually resident in territories recognized as forming part of Poland will acquire Polish nationality ipso facto and will lose their German nationality. German nationals, however, or their descendants who became resident in these territories after Jan. 1, 1908, will not acquire Polish nationality without a special authorization from the Polish State.

Within a period of two years after the coming into force of the present treaty, German nationals over 18 years of age, habitually resident in any of the territories recognized as forming part of Poland, will be entitled to opt for German nationality. Poles who are German nationals over 18 years of age, and habitually resident in Germany, will have a similar right to opt for Polish nationality. Option by a husband will cover his wife and option by parents will cover their children under 18 years of age. Persons who have exercised the above right to opt must within the succeeding twelve months transfer their place of residence to the State for which they have opted. They will be entitled to retain their immovable property in the territory of the other State, where they had their place of residence before exercising the right to opt. They may carry with them their immovable property of every description. No export or import duties or charges may be imposed upon them in connection with the removal of such property.

Within the same period Poles who are German nationals and are in a foreign country will be entitled, in the absence of any provisions to the contrary in the foreign law, and if they have not acquired foreign nationality, to obtain Polish nationality and to lose their German nationality by complying with the requirements laid down by the Polish State.

In this portion of Upper Silesia submitted to a plebiscite the provisions of this article should only come into force as from the definite attribution of the territory.

Article 92.— The proportion and the nature of the financial liabilities of Germany and Prussia to be borne by Poland will be determined in accordance with Article 254 of Part IX (financial clauses) of the present treaty. There shall be excluded from the share of such financial liabilities assumed by Poland that portion of the debt which, according to the finding of the Reparation Commission referred to in the above mentioned article, arises from measures adopted by the German and Prussian Governments with a view to German colonization in Poland. In fixing under Article 256 of the present treaty the value of the property and possessions belonging to the German Empire and to the German States which pass to Poland, with the territory transferred above, the Reparation Commission shall exclude from the valuation buildings, forests, and other State property which belonged to the former kingdom of Poland; Poland shall acquire these properties free of all costs and charges.

In all the German territory transferred in accordance with the present treaty and recognized as forming definitely a part of Poland, the property rights and interests of German nationals shall not be liquidated under Article 297 by the Polish Government except in accordance with the following provisions:

1. The proceeds of the liquidation shall be paid direct to the owner;

2. If, on his application, the mixed arbitral tribunal provided for by the Section 6 of Part X (economic clauses) of the present treaty, or an arbitrator appointed by that tribunal, is satisfied that the conditions of the sale or measures taken by the Polish Government outside of its general legislation were unfairly prejudicial to the price obtained, they shall have discretion to award to the owner equitable compensation to be paid by the Polish Government.

Further agreements will regulate all questions arising out of the cession of the above territory, which are not regulated by the present treaty.

Article 93.— Poland accepts and agrees to embody in a treaty with the principal Allied and Associated Powers such provisions as may be deemed necessary by the said powers to protect the interests of inhabitants of Poland who differ from the majority of the population in race, language or religion.

Poland further accepts and agrees to embody in a treaty with the said powers such provisions as they may deem necessary to protect freedom of transit and equitable treatment of the commerce of other nations.

SECTION IX.— EAST PRUSSIA.

Article 94.— In the area between the southern frontier of East Prussia, as described in Article 28 of Part II (frontiers of Germany) of the present treaty, and the line described below, the inhabitants will be called upon to indicate by a vote the State to which they wish to belong:

The western and northern boundary of Regierungsbezirk Allenstein to its junction with the boundary between the Kreise of Oletsko and Angerburg, thence, the northern boundary of the Kreis of Oletsko to its junction with the old frontier of East Prussia.

Article 95.— The German troops and authorities will be withdrawn from the area defined above within a period not exceeding fifteen days after the coming into force of the present treaty. Until the evacuation is completed they will abstain from all requisitions in money or in kind and from all measures injurious to the economic interests of the country.

On the expiration of the above-mentioned period the said area will be placed under the authority of an

International Commission of five members appointed by the principal Allied and Associated Powers. This Commission will have general powers of administration and, in particular, will be charged with the duty of arranging for the vote, and of taking such measures as it may deem necessary to insure its freedom, fairness, and secrecy. The commission will have all necessary authority to decide any questions to which the execution of these provisions may give rise. The commission will make such arrangements as may be necessary for assistance in the exercise of its functions by officials chosen by itself from the local population; its decisions will be taken by a majority.

Every person, irrespective of sex, will be entitled to vote who:

(a) Is 20 years of age at the date of the coming into force of the present treaty, and

(b) Was born within the area where the vote will take place, or has been habitually resident there from a date to be fixed by the commission.

Every person will vote in the commune where he is habitually resident or, if not habitually resident in the area, in the commune where he was born.

The result of the vote will be determined by commune, (Gemeinde,) according to the majority of the votes in each commune.

On the conclusion of the voting the number of votes cast in each commune will be communicated by the commission to the principal Allied and Associated Powers with a full report as to the taking of the vote and a recommendation as to the line which ought to be adopted as the boundary of East Prussia in this region.

In this recommendation, regard will be paid to the wishes of the inhabitants as shown by the vote, and to the geographical and economic conditions of the locality. The principal Allied and Associated Powers will then fix the frontier between East Prussia and Poland in this region. If the line fixed by the principal Allied and Associated Powers is such as to exclude from East Prussia any part of the territory defined in Article 94, the renunciation of its rights by Germany in favor of Poland, as provided in Article 87, above, will extend to the territories so excluded. As soon as the line has been fixed by the principal Allied and Associated Powers, the authorities administering East Prussia will be notified by the International Commission that they are free to take over the administration of the territory to the north of the line so fixed, which they shall proceed to do within one month of such notification and in the manner prescribed by the commission. Within the same period, and as prescribed by the commission, the Polish Government must proceed to take over the administration of the territory to the south of the line. When the administration of the territory by the East Prussian and Polish authorities, respectively, has been provided for, the powers of the commission will terminate.

Expenditure by the commission, whether in the discharge of its own functions or in the administration of the territory, will be borne by the local revenues. East Prussia will be required to bear such proportion of any deficit as may be fixed by the principal Allied and Associated Powers.

Article 96.— In the area comprising the Kreise of Stuhm and Rosenberg, and the portion of the Kreis of Marienburg which is situated east of the Nogat, and that of Marienwerder east of the Vistula, the inhabitants will be called upon to indicate by a vote, to be taken in each commune, (Gemeinde,) whether they desire the various communes situated in this territory to belong to Poland or to East Prussia.

Article 97.— The German troops and authorities will be withdrawn from the area defined in Article 96 within a period not exceeding fifteen days after the coming into force of the present treaty. Until the evacuation is completed they will abstain from all requisitions in money or in kind and from all measures injurious to the economic interests of the country. On the expiration of the above mentioned period the said area will be placed under the authority of an International Commission of five members appointed by the principal Allied and Associated Powers. This commission, supported, if occasion arises, by the necessary forces, will have general powers of administration, and, in particular, will be charged with the duty of arranging for the vote and of taking such measures as it may deem necessary to insure its freedom, fairness, and secrecy. The commission will conform as far as possible to the provisions of the present treaty relating to the plebiscite in the Allenstein area. Its decision will be taken by a majority. Expenditure by the commission, whether in the discharge of its own functions or in the administration of the territory, will be borne by the local revenues.

On the conclusion of the voting, the number of votes cast in each commune will be communicated by the commission to the principal Allied and Associated Powers, with a full report as to the taking of the vote and a recommendation as to the line which ought to be adopted as the boundary of East Prussia in this region. In this recommendation regard will be paid to the wishes of the inhabitants as shown by the vote and to the geographical and economic conditions of the locality. The principal Allied and Associated Powers will then fix the frontier between East Prussia and Poland in this region, leaving in any case to Poland for the whole of the section bordering on the Vistula full and complete control of the river, including the east bank as far east of the river as may be necessary for its regulation and improvement. Germany agrees that in any portion of the said territory which remains German no fortifications shall at any time be erected.

The principal Allied and Associated Powers will at the same time draw up regulations for assuring to the population of East Prussia to the fullest extent, and under equitable conditions, access to the Vistula, and the use of it for themselves, their commerce, and their boats.

The determination of the frontier and the foregoing regulations shall be binding upon all the parties concerned. When the administration of the territory has been taken over by the East Prussian and Polish authorities, respectively, the powers of the commission will terminate.

Article 98.— Germany and Poland undertakes, within one year of the coming into force of this treaty, to enter into conventions of which the terms, in case of difference, shall be settled by the Council of the League of Nations, with the object of securing on the one hand to Germany full and adequate railroad, telegraphic, and telephonic facilities for communication between the rest of Germany and East Prussia over the intervening Polish territory, and on the other hand to Poland full and adequate railroad, telegraphic, and telephonic facilities for communication between Poland and the free city of Danzig over any German territory that may, on the right bank of the Vistula, intervene between Poland and the free city of Danzig.

SECTION X.— MEMEL.

Article 99.— Germany renounces in favor of the principal Allied and Associated Powers all rights and title over the territories included between the Baltic, the northeastern frontier of East Prussia as defined in Article 28 of Part II (frontiers of Germany) of the present treaty and the former frontier between Germany and Russia.

Germany undertakes to accept the settlement made by the principal Allied and Associated Powers in regard to these territories, particularly in so far as concerns the nationality of the inhabitants.

SECTION XI.— FREE CITY OF DANZIG.

Article 100.— Germany renounces in favor of the principal Allied and Associated Powers all rights and title over the territory comprised within the following limits:

From the Baltic Sea southward to the point where the principal channels of navigation of the Nogat and Vistula (Weichsel) meet;

The boundary of East Prussia as described in Article 28 of Part II (boundaries of Germany) of the present treaty;

Thence the principal channel of navigation of the Vistula downstream to a point about 6½ kilometers north of the bridge of Dirschau;

Thence northwest to point, 5, 1½ kilometers southeast of the Church of Güttland, a line to be fixed on the ground;

Thence in a general westerly direction to the salient of the Kreis of Berent, 8½ kilometers northeast of Schöneck;

A line to be fixed on the ground passing between Mühlbanz on the south and Rambeltsch on the north;

Thence the boundary of the Kreis of Berent, westward to the re-entrant which it forms six kilometers north-northwest of Schöneck;

Thence to a point on the median line of Lonkener See; a line to be fixed on the ground passing north of Neu Fietz and Schatarpi and south of Barenhütte and Lonken; thence the median line of the Lonkener See to its northernmost point; thence to the southern end of Pollenziner See; a line to be fixed on the ground;

Thence the median line of Pollenziner See to its northernmost point;

Thence in a northeasterly direction to a point about

one kilometer south of Koliebken Church, where the Danzig-Neustadt Railway crosses a stream;

A line to be fixed on the ground passing southeast of Kamehlen, Krissau, Fidlin, Sulmin, (Richthof,) Mattern, Schäferei, and to the northwest of Neuendorf, Marschau, Czapielken, Hoch and Klein Kelpin, Pulvermühl, Renneberg, and the towns of Oliva and Zoppot;

Thence the course of this stream to the Baltic Sea.

The boundaries described above are drawn on a German map, scale 1–100,000, attached to the present treaty (Map No. 4).

Article 101.— A commission composed of three members appointed by the principal Allied and Associated Powers, including a High Commissioner as President, one member appointed by Germany, and one member appointed by Poland, shall be constituted within fifteen days of the coming into force of the present treaty for the purpose of delimiting on the spot the frontier of the territory as described above, taking into account as far as possible the existing communal boundaries.

Article 102.— The principal Allied and Associated Powers undertake to establish the town of Danzig, together with the rest of the territory described in Article 100, as a free city. It will be placed under the protection of the League of Nations.

Article 103.— A constitution for the free city of Danzig shall be drawn up by the duly appointed representatives of the free city in agreement with a High Commissioner to be appointed by the League of Nations. The constitution shall be placed under the guarantee of the League of Nations.

The High Commissioner will also be intrusted with the duty of dealing in the first instance with all differences arising between Poland and the free city of Danzig in regard to this treaty or any arrangements or agreements made thereunder.

The High Commissioner shall reside at Danzig.

Article 104.— The principal Allied and Associated Powers undertake to negotiate a treaty between the Polish Government and the free city of Danzig which shall come into force at the same time as the establishment of said free city, with the following objects:

1. To effect the inclusion of the free city of Danzig within the Polish customs frontiers and to establish a free area in the port.

2. To insure to Poland without any restriction the free use and service of all waterways, docks, basins, wharves, and other works within the territory of the free city necessary for Polish imports and exports.

3. To insure to Poland the control and administration of the Vistula and of the whole railway system within the free city; except such street and other railways as serve primarily the needs of the free city and of postal, telegraphic, and telephonic communication between Poland and the Port of Danzig.

4. To insure to Poland the right to develop and improve the waterways, docks, basins, wharves, railways, and other works and means of communication mentioned in this article, as well as to lease or purchase through appropriate processes such land and other property as may be necessary for these purposes.

5. To provide against any discrimination within the free city of Danzig to the detriment of citizens of Poland and other persons of Polish origin or speech.

6. To provide that the Polish Government shall undertake the conduct of the foreign relations of the free city of Danzig as well as the diplomatic protection of citizens of that city when abroad.

Article 105.— On the coming into force of the present treaty German nationals ordinarily resident in the territory described in Article 100 will ipso facto lose their German nationality, in order to become nationals of the free city of Danzig.

Article 106.— Within a period of two years from the coming into force of the present treaty German nationals over 18 years of age ordinarily resident in the territory described in Article 100 will have the right to opt for German nationality.

Option by a husband will cover his wife and option by parents will cover their children less than 18 years of age.

All persons who exercise the right of option referred to above must during the ensuing twelve months transfer their place of residence to Germany.

These persons will be entitled to preserve the immovable property possessed by them in the territory of the free city of Danzig. They may carry with them their movable property of every description. No export or import duties shall be imposed upon them in this connection.

Article 107.—All property situated within the territory of the free city of Danzig belonging to the German Empire or any German State shall pass to the principal Allied and Associated Powers for transfer to the free city of Danzig or to the Polish State as they may consider equitable.

Article 108.— The proportion and nature of the financial liabilities of Germany and of Prussia to be borne by the free city of Danzig shall be fixed in accordance with Article 254 of Part IX (financial clauses) of the present treaty.

All other questions which may arise from the cession of the territory referred to in Article 100 shall be settled by further agreements.

SECTION XII.— SCHLESWIG.

Article 109.— The frontier between Germany and Denmark shall be fixed in conformity with the wishes of the population.

For this purpose the population inhabiting the territories of the former German Empire situated to the north of a line from east to west, (shown by a brown line on the Map No. 3 annexed to the present treaty);

Leaving the Baltic coast about thirteen kilometers east-northeast of Flensburg, running southwest so as to pass southeast of Sygum, Ringsberg, Munkbrarup, Adelby, Tastrup, Jarplund, Oversee, and northwest of Langballigholz, Langballig, Bönstrup, Rüllschau, Weseby, Kleinwolstrup, Gross-Solt; thence westward passing south of Frörup and north of Wanderup; thence in a southwesterly direction passing southeast of Oxlund, Stieglund, and Ostenau and northwest of the villages on the Wanderup-Kollund road; thence in a northwesterly direction passing southwest of Löwenstedt, Joldelund, Goldelund and northeast of Kalkerheide and Högel to the bend of the Soholmer Au, about one kilometer east of Soholm, where it meets the southern boundary of the Kreis of Tondern; thence following this boundary to the North Sea; thence passing south of the islands of Fohr and Amrum and north of the islands of Oland and Langeness shall be called upon to pronounce by a vote which will be taken under the following conditions:

1. Within a period not exceeding ten days from the coming into force of the present treaty, the German troops and authorities (including the Oberpräsidenten, Regierungs-Präsidenten, Landräthe, Amtsvorsther, Oberbürgermeister) shall evacuate the zone lying to the north of the line above fixed.

Within the same period the Workmen's and Soldiers' Councils which have been constituted in this zone shall be dissolved; members of such councils who are natives of another region and are exercising their functions at the date of the coming into force of the present treaty, or who have gone out of office since the 1st March, 1919, shall also be evacuated.

The said zone shall immediately be placed under the authority of an international commission, composed of five members, of whom three will be designated by the principal Allied and Associated Powers; the Norwegian and Swedish Governments will each be requested to designate a member. In the event of their failing to do so, these two members will be chosen by the principal Allied and Associated Powers.

The commission, assisted in case of need by the necessary force, shall have general powers of administration. In particular, it shall at once provide for filling the places of the evacuated German authorities, and, if necessary, shall itself give orders for their evacuation and proceed to fill the places of such local authorities as may be required. It shall take all steps which it thinks proper to insure the freedom, fairness, and secrecy of the vote. It shall be assisted by German and Danish technical advisers chosen by it from among the local population. Its decisions will be taken by a majority.

One-half of the expenses of the International Commission and of the expenditure occasioned by the plebiscite shall be paid by Germany.

2. The right to vote shall be given all persons, without distinction of sex, who:

(a) Have completed their twentieth year at the date of the coming into force of the present treaty; and

(b) Were born in the zone in which the plebiscite is taken, or had been domiciled there since a date before the 1st January, 1900, or had been expelled by the German authorities without having retained their domicile there.

Every person will vote in the commune (Gemeinde) where he is domiciled or of which he is a native.

Military persons, officers, non-commissioned officers and soldiers of the German Army, who are natives of the zone of Schleswig, in which the plebiscite is taken, shall be given the opportunity to return to their native place in order to take part in the voting there.

3. In the section of the evacuated zone lying to the north of a line from east to west (shown by a

red line on Map No. 3, which is annexed to the present treaty):

Passing south of the Island of Alsen and following the median line of Flensburg Fjord;

Thence leaving the fjord about six kilometers north of Flensburg, and following the course of the stream flowing past Kupfermühle upstream to a point north of Niehuus;

Thence passing north of Pattburg and Ellund and south of Frösless to meet the eastern boundary of the Kreis of Tondern at its junction with the boundary between the old jurisdiction of Slogs and Kjaer, (Slogs Herred and Kjaer Herred);

Thence the latter boundary to where it meets the Scheidebek;

Thence the course of the Scheidebek, (Alte Au, Süder Au, and Wied Au downstream successively to the point where the latter bends northward, about 1,500 meters west of Ruttebüll;

Thence in a west-northwesterly direction to meet the North Sea north of Sieltoft;

Thence passing north of the Island of Sylt.

The vote above provided for shall be taken within a period not exceeding three weeks after the evacuation of the country by the German troops and authorities.

The result will be determined by the majority of votes cast in the whole of this section. This result will be immediately communicated by the commission to the principal Allied and Associated Governments and proclaimed.

If the vote results in favor of the reincorporation of this territory in the Kingdom of Denmark, the Danish Government, in agreement with the commission, will be entitled to effect its occupation with their military and administrative authorities immediately after the proclamation.

4. In the section of the evacuated zone situated to the south of the preceding section and to the north of the line which starts from the Baltic Sea thirteen kilometers from Flensburg and ends north of the islands of Oland and Langeness, the vote will be taken within a period not exceeding five weeks after the plebiscite shall have been held in the first section.

The result will be determined by communes (Gemeinden) in accordance with the majority of the votes cast in each commune, (Gemeinde).

Article 110.— Pending a delimination on the spot, a frontier line will be fixed by the principal Allied and Associated Powers according to a line based on the result of the voting, and proposed by the International Commission, and taking into account the particular geographical and economic conditions of the localities in question.

From that time the Danish Government may effect the occupation of these territories which the Danish civil and military authorities, and the German Government may reinstate up to the said frontier line the German civil and military authorities whom it has evacuated.

Germany hereby renounced definitely in favor of the principal Allied and Associated Powers all rights of sovereignty over the territories situated to the north of the frontier line fixed in accordance with the above provisions. The principal Allied and Associated Powers will hand over the said territories to Denmark.

Article 111.—A commission, composed of seven members, five of whom shall be nominated by the principal Allied and Associated Powers, one by Denmark, and one by Germany, shall be constituted within fifteen days from the date when the final result of the vote is known, to trace the frontier line on the spot.

The decisions of the commission will be taken by a majority of votes, and shall be binding on the parties concerned.

Article 112.— All the inhabitants of the territory which is returned to Denmark will acquire Danish nationality ipso facto, and will lose their German nationality. Persons, however, who had become habitually resident in this territory after the 1st October, 1918, will not be able to acquire Danish nationality without permission from the Danish Government.

Article 113.—Within two years from the date on which the sovereignty over the whole or part of the territory of Schleswig subjected to the plebiscite is restored to Denmark:

Any person over 18 years of age, born in the territory restored to Denmark, not habitually resident in this region and possessing German nationality, will be entitled to opt for Denmark.

Any person over 18 years of age habitually resident in the territory restored to Denmark will be entitled to opt for Germany.

Option by a husband will cover his wife and option by parents will cover their children less than 18 years of age.

Persons who have exercised the above right to opt must within the ensuing twelve months transfer their place of residence to the State in favor of which they have opted.

They will be entitled to retain the immovable property which they own in the territory of the other State in which they were habitually resident before opting. They may carry with them their movable property of every description. No export or import duties may be imposed upon them in connection with the removal of such property.

Article 114.— The proportion and nature of the financial or other obligations of Germany and Prussia which are to be assumed by Denmark will be fixed in accordance with Article 254 of Part IX (financial clauses) of the present treaty.

Further stipulations will determine any other questions arising out of the transfer to Denmark of the whole or part of the territory of which she was deprived by the treaty of Oct. 30, 1864.

SECTION XIII.— HELIGOLAND.

Article 115.— The fortifications, military establishments, and harbors of the islands of Heligoland and Dune shall be destroyed under the supervision of the principal Allied Governments by German labor and at the expense of Germany within a period to be determined by the said Governments.

The term "harbors" shall include the Northeast Mole, the West Wall, the outer and inner breakwaters and reclaimed land within them, and all naval and military works, fortifications, and buildings, constructed or under construction, between lines connecting the following positions taken from the British Admiralty Chart No. 126 of 19 April 1918:

(A) Lat. 54 degrees 10 minutes 49 seconds N.; long. 7 degrees 53 minutes 39 seconds E.;
(B) Lat. 54 degrees 10 minutes 35 seconds N.; long. 7 degrees 54 minutes 18 seconds E.;
(C) Lat. 54 degrees 10 minutes 14 seconds N.; long. 7 degrees 54 minutes 0 seconds E.;
(D) Lat. 54 degrees 10 minutes 17 seconds N.; long. 7 degrees 53 minutes 37 seconds E.;
(E) Lat. 54 degrees 10 minutes 44 seconds N.; long. 7 degrees 53 minutes 26 seconds E.

These fortifications, military establishments, and harbors shall not be reconstructed, nor shall any similar works be constructed in future.

SECTION XIV.— RUSSIA AND RUSSIAN STATES.

Article 116.— Germany acknowledges and agrees to respect as permanent and inalienable the independence of all the territories which were part of the former Russian Empire on August 1, 1914.

In accordance with the provisions of Article 259 of Part IX (financial clauses) and Article 292 of Part X, (economic clauses), Germany accepts definitely the abrogation of the Brest-Litovsk Treaties and of all treaties, conventions, and agreements entered into by her with the Maximalist Government in Russia.

The Allied and Associated Powers formally reserve the rights of Russia to obtain from Germany restitution and reparation based on the principles of the present treaty.

Article 117.— Germany undertakes to recognize the full force of all treaties or agreements which may be entered into by the Allied and Associated Powers with States now existing or coming into existence in future in the whole or part of the former Empire of Russia as existed on Aug. 1, 1914, and to recognize the frontiers of any such States as determined therein.

PART IV.— GERMAN RIGHTS AND INTERESTS OUTSIDE GERMANY.

Article 118.— In territory outside her European frontiers as fixed by the present treaty, Germany renounces all rights, titles, and privileges whatever in or over territory which belonged to her or to her allies, and all rights, titles, and privileges, whatever their origin, which she held as against the Allied and Associated Powers.

Germany undertakes immediately to recognize and to conform to the measures which may be taken now or in the future by the principal Allied and Associated Powers, in agreement where necessary with third powers, in order to carry the above stipulation into effect.

In particular, Germany declares her acceptance of the following articles relating to certain special subjects:

SECTION I.— GERMAN COLONIES

Article 119.— Germany renounces in favor of the principal Allied and Associated Powers all her rights and titles over her overseas possessions.

Article 120.—All movable and immovable property in such territories belonging to the German Empire or to any German State shall pass to the Government exercising authority over such territories on the terms laid down in Article 257 of Part IX (financial clauses) of the present treaty. The decision of the local courts in any dispute as to the nature of such property shall be final.

Article 121.— The provisions of Section I (commercial relations) and Section IV (property, rights, and interests) of Part X (economic clauses) of the present treaty shall apply in the case of these territories whatever be the form of government adopted for them.

Article 122.— The Government exercising authority over such territories may make such provisions as it thinks fit with reference to the repatriation from them of German nationals, and to the conditions upon which German subjects of European origin shall, or shall not, be allowed to reside, hold property, trade, or exercise a profession in them.

Article 123.— The provisions of Article 260 of Part IX (financial clauses) of the present treaty shall apply in the case of all agreements concluded with German nationals for the construction or exploitation of public works in the German overseas possessions, as well as any sub-concessions or contracts resulting therefrom which may have been made to or with such nationals.

Article 124.— Germany hereby undertakes to pay in accordance with the estimate to be presented by the French Government, and approved by the Reparation Commission, reparation for damage suffered by French nationals in the Cameroons or the frontier zone by reason of the acts of the German civil and military authorities and of German private individuals during the period from Jan. 1, 1900, to Aug. 1, 1914.

Article 125.— Germany renounces all rights under the conventions and agreements with France of Nov. 4, 1911, and Sept. 28, 1912, relating to equatorial Africa. She undertakes to pay to the French Government, in accordance with the estimate to be presented by the Government and approved by the Reparation Commission, all the deposits, credits, advances, &c., effected by virtue of these instruments in favor of Germany.

Article 126.— Germany undertakes to accept and observe the agreements made or to be made by the Allied and Associated Powers or some of them with any other power with regard to the trade in arms and spirits, and to the matters dealt with in the general act of Berlin of Feb. 26, 1885, the general act of Brussels of July 2, 1890, and the conventions completing or modifying the same.

Article 127.— The native inhabitants of the former German overseas possessions shall be entitled to the diplomatic protection of the Governments exercising authority over those territories.

SECTION II.— CHINA.

Article 128.— Germany renounces in favor of China all benefits and privileges resulting from the provisions of the final protocol signed at Peking on Sept. 7, 1901, and from all annexes, notes, and documents supplementary thereto. She likewise renounces in favor of China any claim to indemnities accruing thereunder subsequent to March 14, 1917.

Article 129.— From the coming into force of the present treaty the high contracting parties shall apply in so far as concerns them respectively:

1. The arrangement of Aug. 29, 1902, regarding the new Chinese customs tariff.

2. The arrangement of Sept. 27, 1905, regarding Whang-Poo, and the provisional supplementary arrangement of April 4, 1912. China, however, will no longer be bound to grant to Germany the advantages or privileges which she allowed Germany under these arrangements.

Article 130.— Subject to the provisions of Section VIII of this part, Germany cedes to China all the buildings, wharves and pontoons, barracks, forts, arms and munitions of war, vessels of all kinds, wireless telegraphy installations and other public property belonging to the German Government, which are situated or may be in the German concessions at Tientsin and Hankow or elsewhere in Chinese territory.

It is understood, however, that premises used as diplomatic or consular residences or offices are not included in the above cession, and, furthermore, that no steps shall be taken by the Chinese Government to dispose of the German public and private property situated within the so-called legation quarter at Peking without the consent of the diplomatic representatives of the powers which, on the coming into force of the present treaty, remain parties to the final protocol of Sept. 7, 1901.

Article 131.— Germany undertakes to restore to China within twelve months from the coming into force of the present treaty all the astronomical instruments which her troops in 1900–1901 carried away from China, and to defray all expenses which may be incurred in effecting such restoration, including the expenses of dismounting, packing, transporting, insurance, and installation in Peking.

Article 132.— Germany agrees to the abrogation of the leases from the Chinese Government under which the German concessions at Hankow and Tientsin are now held.

China, restored to the full exercise of her sovereign rights in the above areas, declares her intention of opening them to international residence and trade. She further declares that the abrogation of the leases under which these concessions are now held shall not affect the property rights of nationals or Allied and Associated Powers who are holders of lots in these concessions.

Article 133.— Germany waives all claims against the Chinese Government or against any Allied or Associated Government arising out of the internment of German nationals in China and their repatriation. She equally renounces all claims arising out of the capture and condemnation of German ships in China or the liquidation, sequestration or control of German properties, rights, and interests in that country since Aug. 14, 1917. This provision, however, shall not effect the rights of the parties interested in the proceeds of any such liquidation, which shall be governed by the provisions of Part X (economic clauses) of the present treaty.

Article 134.— Germany renounces, in favor of the Government of his Britannic Majesty, the German State property in the British concessions at Shameen at Canton. She renounces, in favor of the French and Chinese Governments conjointly, the property of the German school situated in the French concession at Shanghai.

SECTION III.— SIAM.

Article 135.— Germany recognizes that all treaties, conventions, and agreements between her and Siam, and all rights, titles, and privileges derived therefrom, including all rights of extraterritorial jurisdiction, terminated as from July 22, 1917.

Article 136.—All goods and property in Siam belonging to the German Empire or to any German State, with the exception of premises used as diplomatic or consular residences or offices, pass ipso facto and without compensation to the Siamese Government.

The goods, property, and private rights of German nationals in Siam shall be dealt with in accordance with the provisions of Part X (economic clauses) of the present treaty.

Article 137.— Germany waives all claims against the Siamese Government on behalf of herself or her nationals arising out of the seizure or condemnation of German ships, the liquidation of German property, or the internment of German nationals in Siam. This provision shall not affect the rights of the parties interested in the proceeds of any such liquidation, which shall be governed by the provisions of Part X (economic clauses) of the present treaty.

SECTION IV.— LIBERIA.

Article 138.— Germany renounces all rights and privileges arising from the arrangements of 1911 and 1912 regarding Liberia, and particularly the right to nominate a German receiver of customs in Liberia. She further renounces all claim to participate in any measures whatsoever which may be adopted for the rehabilitation of Liberia.

Article 139.— Germany recognizes that all treaties and arrangements between her and Liberia terminated as from Aug. 4, 1917.

Article 140.— The property, rights, and interests of Germans in Liberia shall be dealt with in accordance with Part X (economic clauses) of the present treaty.

SECTION V.— MOROCCO.

Article 141.— Germany renounces all rights, titles, and privileges conferred on her by the general act of Algeciras of April 7, 1906, and by the Franco-German agreements of Feb. 9, 1909, and Nov. 4, 1911. All treaties, agreements, arrangements, and contracts con-

cluded by her with the Sherifian Empire are regarded as abrogated as from Aug. 3, 1914.

In no case can Germany take advantage of these instruments, and she undertakes not to intervene in any way in negotiations relating to Morocco which may take place between France and the other powers.

Article 142.—Germany having recognized the French Protectorate in Morocco, hereby accepts all the consequences of its establishment, and she renounces the régime of the capitulations therein.

This renunciation shall take effect as from Aug. 3, 1914.

Article 143.— The Sherifian Government shall have complete liberty of action in regulating the status of German nationals in Morocco and the conditions in which they may establish themselves there.

German-protected persons, sensars, and "associés agricoles" shall be considered as having ceased, as from Aug. 3, 1914, to enjoy the privileges attached to their status and shall be subject to the ordinary law.

Article 144.— All property and possessions in the Sherifian Empire of the German Empire and the German States pass to the Maghzen without payment.

For the purposes of this clause, the property and possessions of the German Empire and States shall be deemed to include all the property of the crown, the empire, or States, and the private property of the former German Emperor and other royal personages.

All movable and immovable property in the Sherifian Empire belonging to German nationals shall be dealt with in accordance with Sections III and IV of Part X (economic clauses) of the present treaty.

Mining rights which may be recognized as belonging to German nationals by the Court of Arbitration set up under the Moroccan mining regulations shall form the subject of a valuation, which the arbitrators shall be requested to make, and these rights shall then be treated in the same way as property in Morocco belonging to German nationals.

Article 145.— The German Government shall insure the transfer to a person nominated by the French Government of the shares representing Germany's portion of the capital of the State Bank of Morocco. The value of these shares, as assessed by the Reparation Commission, shall be paid to the Reparation Commission for the credit of Germany on account of the sums due for reparation. The German Government shall be responsible for indemnifying its nationals so dispossessed.

This transfer will take place without prejudice to the repayment of debts which German nationals may have contracted toward the State Bank of Morocco.

Article 146.— Moroccan goods entering Germany shall enjoy the treatment accorded to French goods.

SECTION VI.— EGYPT.

Article 147.— Germany declares that she recognizes the protectorate proclaimed over Egypt by Great Britain on Dec. 18, 1914, and that she renounces the régime of the capitulations in Egypt. This renunciation shall take effect as from Aug. 4, 1914.

Article 148.—All treaties, agreements, arrangements, and contracts concluded by Germany with Egypt are regarded as abrogated as from Aug. 4, 1914.

In no case can Germany avail herself of these instruments, and she undertakes not to intervene in any way in negotiations relating to Egypt which may take place between Great Britain and the other powers.

Article 149.— Until an Egyptian law of judicial organization establishing courts with universal jurisdiction comes into force, provision shall be made, by means of decrees issued by his Highness the Sultan for the exercise of jurisdiction over German nationals and property by the British consular tribunals.

Article 150.— The Egyptian Government shall have complete liberty of action in regulating the status of German nationals and the conditions under which they may establish themselves in Egypt.

Article 151.— Germany consents to the abrogation of the decree issued by his Highness the Khédive on Nov. 28, 1904, relating to the commission of the Egyptian public debt or to such changes as the Egyptian Government may think it desirable to make therein.

Article 152.— Germany consents, in so far as she is concerned, to the transfer to his Britannic Majesty's Government of the powers conferred on his Imperial Majesty the Sultan, by the convention signed at Constantinople on Oct. 29, 1888, relating to the free navigation of the Suez Canal.

She renounces all participation in the Sanitary, Maritime, and Quarantine Board of Egypt, and consents, in so far as she is concerned, to the transfer to the Egyptian authorities of the powers of that board.

Article 153.—All property and possessions in Egypt of the German Empire and the German States pass to the Egyptian Government without payment.

For this purpose the property and possessions of the German Empire and States shall be deemed to include all the property of the crown, the empire or the States, and the private property of the former German Emperor and other royal personages.

All movable and immovable property in Egypt belonging to German nationals shall be dealt with in accordance with Sections III and IV of Part X (economic clauses) of the present treaty.

Article 154.— Egyptian goods entering Germany shall enjoy the treatment accorded to British goods.

SECTION VII.— TURKEY AND BULGARIA.

Article 155.— Germany undertakes to recognize and accept all arrangements which the Allied and Associated Powers may make with Turkey and Bulgaria, with reference to any rights, interests, and privileges whatever which might be claimed by Germany or her nationals in Turkey and Bulgaria and which are not dealt with in the provisions of the present treaty.

SECTION VIII.— SHANTUNG.

Article 156.— Germany renounces, in favor of Japan, all her rights, titles, and privileges — particularly those concerning the territory of Kiao-Chau, railways, mines, and submarine cables, which she acquired in virtue of the treaty concluded by her with China on 6th March, 1898, and of all other arrangements relative to the Province of Shantung.

All German rights in the Tsing-tao-Tsinan-Fu railway, including its branch lines, together with its subsidiary property of all kinds, stations, shops, fixed and rolling stock, mines, plant, and material for the exploitation of the mines are and remain acquired by Japan, together with all rights and privileges attaching thereto.

The German State submarine cables from Tsing-tao to Shanghai and from Tsing-tao to Che Foo, with all the rights, privileges, and properties attaching thereto, are similarly acquired by Japan, free and clear of all charges and incumbrances.

Article 157.— The movable and immovable property owned by the German State in the territory of Kiao-Chau, as well as all the rights which Germany might claim in consequence of the works or improvements made or of the expenses incurred by her, directly or indirectly, in connection with this territory, are and remain acquired by Japan, free and clear of all charges and incumbrances.

Article 158.— Germany shall hand over to Japan within three months from the coming into force of the present treaty the archives, registers, plans, title deeds, and documents of every kind, wherever they may be, relating to the administration, whether civil, military, financial, judicial or other, of the territory of Kiao-Chau.

Within the same period Germany shall give particulars to Japan of all treaties, arrangements or agreements relating to the rights, title or privileges referred to in the two preceding articles.

PART V.— MILITARY, NAVAL, AND AERIAL CLAUSES.

In order to render possible the initiation of a general limitation of the armaments of all nations, Germany undertakes strictly to observe the military, naval, and air clauses which follow:

SECTION I.— MILITARY CLAUSES.

Chapter I.— Effectives and Cadres of the German Army.

Article 159.— The German military forces shall be demobilized and reduced as prescribed hereinafter.

Article 160.— 1. By a date which must not be later than March 31, 1920, the German Army must not comprise more than seven divisions of infantry and three divisions of cavalry. After that date the total number of effectives in the army of the States constituting Germany must not exceed 100,000 men, including officers and establishments of depots. The army shall be devoted exclusively to the maintenance of order within the territory and to the control of the frontiers.

The total effective strength of officers, including the personnel of staffs, whatever their composition, must not exceed 4,000.

2. Divisions and army corps headquarters staffs shall be organized in accordance with Table No. 1 annexed to this section.

The number and strength of the units of infantry, artillery, engineers, technical services, and troops laid down in the aforesaid table constitute maxima which must not be exceeded.

The following units may each have their own depot: An infantry regiment; a cavalry regiment; a regiment of field artillery; a battalion of pioneers.

3. The divisions must not be grouped under more than two army corps headquarters staffs.

The maintenance of formation of forces differently grouped or of other organizations for the command of troops or for preparation for war is forbidden.

The Great German General Staff and all similar organizations shall be dissolved and may not be reconstituted in any form.

The officers, or persons in the position of officers, in the Ministries of War in the different States in Germany and in the administrations attached to them, must not exceed three hundred in number and are included in the maximum strength of four thousand laid down in the third sub-paragraph of the first paragraph of this article.

Article 161.— Army administrative services consisting of civilian personnel not included in the number of effectives prescribed by the present treaty will have such personnel reduced in each class to one-tenth of that laid down in the budget of 1913.

Article 162.— The number of employes or officials of the German States, such as customs officers, forest guards, and coast guards shall not exceed that of the employes or officials functioning in these capacities in 1913.

The number of gendarmes and employes or officials of the local or municipal police may only be increased to an extent corresponding to the increase of population since 1913 in the districts or municipalities in which they are employed.

These employes and officials may not be assembled for military training.

Article 163.— The reduction of the strength of the German military forces as provided for in Article 160 may be effected gradually in the following manner:

Within three months from the coming into force of the present treaty the total number of effectives must be reduced to 200,000 and the number of units must not exceed twice the number of those laid down in Article 160.

At the expiration of this period, and at the end of each subsequent period of three months, a conference of military experts of the principal Allied and Associated Powers will fix the reductions to be made in the ensuing three months, so that by the 31st of March, 1920, at the latest, the total number of German effectives does not exceed the maximum number of 100,000 men laid down in Article 160. In these successive reductions the same ratio between the number of officers and of men, and between the various kinds of units shall be maintained as is laid down in that article.

Chapter II.— Armament, Munitions, and Material.

Article 164.— Up till the time at which Germany is admitted as a member of the League of Nations the German Army must not possess an armament greater than the amounts fixed in Table No. 2, annexed to this section, with the exception of an optional increase not exceeding one-twenty-fifth part for small arms and one-fiftieth part for guns, which shall be exclusively used to provide for such eventual replacements as may be necessary.

Germany agrees that after she has become a member of the League of Nations the armaments fixed in the said table shall remain in force until they are modified by the Council of the League. Furthermore she hereby agrees strictly to observe the decisions of the Council of the League on this subject.

Article 165.— The maximum number of guns, machine guns, trench mortars, rifles, and the amount of ammunition and equipment which Germany is allowed to maintain during the period between the coming into force of the present treaty and the date of March 31, 1920, referred to in Article 160, shall bear the same proportion to the amount authorized in Table No. 3 annexed to this section as the strength of the German Army as reduced from time to time in accordance with Article 163 bears to the strength permitted under Article 160.

Article 166.— At the date of March 31, 1920, the stock of munitions which the German Army may have at its disposal shall not exceed the amounts fixed in Table No. 3 annexed to this section.

Within the same period the German Government will store these stocks at points to be notified to the Governments of the principal Allied and Associated Powers. The German Government is forbidden to establish any other stocks, depots, or reserves of munitions.

Article 167.— The number and calibre of the guns constituting at the date of the coming into force of the present treaty the armament of the fortified works, fortresses, and any land or coast forts which Germany is allowed to retain, must be notified immediately by the German Government to the Governments of the principal Allied and Associated Powers, and will constitute maximum amounts which may not be exceeded.

Within two months from the coming into force of the present treaty the maximum stock of ammunition for these guns will be reduced to, and maintained at, the following uniform rates: Fifteen hundred rounds per piece for those the calibre of which is 10.5 cm. and under; 500 rounds per piece for those of higher calibre.

Article 168.— The manufacture of arms, munitions, or any war material shall only be carried out in factories or works the locations of which shall be communicated to and approved by the Governments of the principal Allied and Associated Powers, and the number of which they retain the right to restrict.

Within three months from the coming into force of the present treaty all other establishments for the manufacture, preparation, storage, or design of arms, munitions, or any war material whatever shall be closed down. The same applies to all arsenals except those used as depots for the authorized stocks of munitions. Within the same period the personnel of these arsenals will be dismissed.

Article 169.— Within two months from the coming into force of the present treaty, German arms, munitions, and war materials, including anti-aircraft material, existing in Germany in excess of the quantities allowed must be surrendered to the Governments of the principal Allied and Associated Powers, to be destroyed or rendered useless. This will also apply to any special plant intended for the manufacture of military material, except such as may be recognized as necessary for equipping the authorized strength of the German Army.

The surrender in question will be effected at such points in German territory as may be selected by the said Governments.

Within the same period, arms, munitions, and war material, including anti-aircraft material, of origin other than German, in whatever state they may be, will be delivered to the said Governments, who will decide as to their disposal.

Arms and munitions which on account of the successive reductions in the strength of the German Army become in excess of the amounts authorized by Tables 2 and 3 of the annex must be handed over in the manner laid down above within such periods as may be decided by the conferences referred to in Article 163.

Article 170.— Importation into Germany of arms, munitions, and war material of every kind shall be strictly prohibited.

The same applies to the manufacture for and export to foreign countries of arms, munitions, and war material of every kind.

Article 171.— The use of asphyxiating, poisonous or other gases and all analogous liquids, materials or devices being prohibited, their manufacture and importation are strictly forbidden in Germany.

The same applies to materials specially intended for the manufacture, storage, and use of the said products or devices.

The manufacture and the importation into Germany of armored cars, tanks, and all similar constructions suitable for use in war are also prohibited.

Article 172.— Within a period of three months from the coming into force of the present treaty the German Government will disclose to the Governments of the principal Allied and Associated Powers the nature and mode of manufacture of all explosives, toxic substances or other like chemical preparations used by them in the war or prepared by them for the purpose of being so used.

Chapter III.— Recruiting and Military Training.

Article 173.— Universal compulsory military service shall be abolished in Germany.

The German Army may only be constituted and recruited by means of voluntary enlistment.

Article 174.— The period of enlistment for noncommissioned officers and privates must be twelve consecutive years.

The number of men discharged for any reason before the expiration of their term of enlistment must not exceed in any year 5 per cent. of the total effectives as fixed by the second sub-paragraph of Paragraph 1 of Article 160 of the present treaty.

Article 175.— The officers who are retained in the army must undertake the obligation to serve in it up to the age of forty-five years, at least.

Officers newly appointed must undertake to serve on the active list for twenty-five consecutive years, at least.

Officers who have previously belonged to any formation whatever of the army and who are not retained in the units allowed to be maintained must not take part in any military exercise, whether theoretical or practical, and will not be under any military obligations whatever.

The number of officers discharged for any reason before the expiration of their term of service must not exceed in any year 5 per cent. of the total effectives of officers provided for in the third sub-paragraph of Paragraph 1 of Article 100 of the present treaty.

Article 176.— On the expiration of two months from the coming into force of the present treaty there must only exist in Germany the number of military schools which is absolutely indispensable for the recruitment of the officers of the units allowed. These schools will be exclusively intended for the recruitment of officers of each arm, in the proportion of one school per arm.

The number of students admitted to attend the courses of the said schools will be strictly in proportion to the vacancies to be filled in the cadres of officers. The students and the cadres will be reckoned in the effectives fixed by the second and third sub-paragraphs of Paragraph 1 of Article 160 of the present treaty.

Consequently, and during the period fixed above, all military academies or similar institutions in Germany, as well as the different military schools for officers, student officers, (aspiranten,) cadets, noncommissioned officers, or student noncommissioned officers, (aspiranten.) other than the schools above provided for, will be abolished.

Article 177.— Educational establishments, the universities, societies of discharged soldiers, shooting or touring clubs, and, generally speaking, associations of every description, whatever be the age of their members, must not occupy themselves with any military matters. In particular they will be forbidden to instruct or exercise their members, or to allow them to be instructed or exercised, in the profession or use of arms.

These societies, associations, educational establishments, and universities must have no connection with the Ministries of War or any other military authority.

Article 178.— All measures of mobilization or appertaining to mobilization are forbidden.

In no case must formations, administrative services, or general staffs include supplementary cadres.

Article 179.— Germany agrees, from the coming into force of the present treaty, not to accredit nor to send to any foreign country any military, naval, or air mission, nor to allow any such missions to leave her territory, and Germany further agrees to take appropriate measures to prevent German nationals from leaving her territory to become enrolled in the army, navy, or air service of any foreign power, or to be attached to such army, navy, or air service for the purpose of assisting in the military, naval, or air training thereof, or otherwise for the purpose of giving military, naval, or air instruction in any foreign country.

The Allied and Associated Powers agree, so far as they are concerned, from the coming into force of the present treaty, not to enroll in nor to attach to their armies or naval or air forces any German national for the purpose of assisting in the military training of such armies or naval or air forces, or otherwise to employ any such German national as military, naval, or aeronautic instructor.

The present provision, however, does not affect the right of France to recruit for the Foreign Legion in accordance with French military laws and regulations.

Chapter IV.— Fortifications.

Article 180.— All fortified works, fortresses, and field works situated in German territory to the west of a line drawn fifty kilometers to the east of the Rhine shall be disarmed and dismantled.

Within a period of two months from the coming into force of the present treaty such of the above fortified works, fortresses, and field works as are situated in territory not occupied by Allied and Associated troops shall be disarmed, and within a further period of four months they shall be dismantled. Those which are situated in territory occupied by Allied and Associated troops shall be disarmed and dismantled within such periods as may be fixed by the Allied High Command.

The construction of any new fortification, whatever its nature and importance, is forbidden in the zone referred to in the first paragraph above.

The system of fortified works of the southern and eastern frontiers of Germany shall be maintained in its existing state.

TABLE No. 1.

State and Establishment of Army Corps Headquarters Staffs and of Infantry and Cavalry Divisions.

These tabular statements do not form a fixed establishment to be imposed on Germany, but the figures contained in them (number of units and strengths) represent maximum figures, which should not in any case be exceeded.

1. *Army Corps Headquarters Staffs.*

UNITS	Maximum number authorized	Maximum strength of each unit	
		Officers	N.C.O.'s and men
Army corps hdq. staffs	2	30	150
Total for hdq. staffs	.....	60	300

2. *Establishment of an Infantry Division.*

UNITS	Maximum number of such units in a single division	Maximum strength of each unit	
		Officers	N.C.O.'s and men
Hdqrs. of inf. div	1	25	70
Hdqrs. of divisional inf	1	4	30
Hdqrs. of divisional art	1	4	30
Regiment of inf	3	70	2,300
(Each regiment comprises 3 battalions of infantry. Each battalion comprises 3 companies of infantry and 1 machine-gun company.)			
Trench mortar company	3	6	150
Divisional squadron	1	6	150
Field artillery regiment	1	85	1,300
(Each regiment comprises 3 groups of artillery. Each group comprises 3 batteries.)			
Pioneer battalion	1	12	400
(This battalion comprises 2 companies of pioneers, 1 pontoon detachment, 1 searchlight section.)			
Signal detachment	1	12	300
(This detachment comprises 1 telephone detachment, 1 listening section, 1 carrier pigeon section.)			
Divisional Med. Service	1	20	400
Parks and convoys	.....	14	800
Total for infantry div	.....	410	10,830

3. *Establishment of a Cavalry Division.*

UNITS	Maximum number of such units in a single division	Maximum strength of each unit	
		Officers	N.C.O.'s and men
Headquarters of a cavalry division	1	15	50
Cavalry regiment	6	40	800
(Each regiment comprises four squadrons.)			
Horse artillery (three batteries)	1	20	400
Total for cavalry division	.....	275	5,250

TABLE No. 2.

Tabular statement of armament established for a maximum of seven infantry divisions, three cavalry divisions, and two army corps headquarters staffs.

MATERIAL	Inf. Div.	For 7 Inf. Divs.	Cav. Div.	For 3 Cav. Divs.	Total columns 2 & 4
Rifles	12,000	84,000	.....	.....	84,000
Carbines	.....	.....	6,000	18,000	18,000
Heavy machine guns	108	756	12	36	792
Light machine guns	162	1,134	.....	.....	1,134
Medium trench mortars	9	63	.....	.....	63
Light trench mortars	27	189	.....	.....	189
7.7 cm. guns	24	168	12	36	204
10.5 cm. howitzers	12	84	.....	.....	84

Army corps headquarters staff establishment must be drawn from the increased armaments of the divisional infantry.

TABLE No. 3.

Maximum Stocks Authorized.

MATERIAL	Maximum number of arms authorized	Establishment per unit. Rounds	Maximum totals. Rounds
Rifles	84,000	400	40,800,000
Carbines	18,000	.....	.....
Heavy machine guns	792	8,000	15,408,000
Light machine guns	1,134	.....	.....
Medium trench mortars	63	400	25,000
Light trench mortars	189	800	151,200
Field artillery—			
7.7 cm. guns	204	1,000	204,000
10.5 cm. howitzers	84	800	67,200

SECTION II.— NAVAL CLAUSES.

Article 181.— After the expiration of a period of two months from the coming into force of the present treaty the German naval forces in commission must not exceed: Six battleships of the Deutschland or Lothringen type, six light cruisers, twelve destroyers, twelve torpedo boats, or an equal number of ships constructed to replace them as provided in Article 190.

No submarines are to be included. All other warships except where there is provision to the contrary in the present treaty, must be placed in reserve or devoted to commercial purposes.

Article 182.— Until the completion of the minesweeping prescribed by Article 193, Germany will keep in commission such number of minesweeping vessels as may be fixed by the Governments of the principal Allied and Associated Powers.

Article 183.—After the expiration of a period of two months from the coming into force of the present treaty the total personnel of the German Navy, including the manning of the fleet, coast defenses, signal stations, administration, and other land services, must not exceed 15,000, including officers and men of all grades and corps. The total strength of officers and warrant officers must not exceed 1,500. Within two months from the coming into force of the present treaty the personnel in excess of the above strength shall be demobilized. No naval or military corps or reserve force in connection with the navy may be organized in Germany without being included in the above strength.

Article 184.— From the date of the coming into force of the present treaty all the German surface warships which are not in German ports cease to belong to Germany, who renounces all rights over them. Vessels which, in compliance with the armistice of Nov. 11, 1918, are now interned in the ports of the Allied and Associated Powers, are declared to be finally surrendered. Vessels which are now interned in neutral ports will be there surrendered to the Governments of the principal Allied and Associated Powers. The German Government must address a notification to that effect to the neutral powers on the coming into force of the present treaty.

Article 185.— Within a period of two months from the coming into force of the present treaty the German surface warships enumerated below will be surrendered to the Governments of the principal Allied and Associated Powers in such allied ports as the said powers may direct. These warships will have been disarmed as provided in Article 23 of the armistice, dated Nov. 11, 1918. Nevertheless, they must have all their guns on board.

Battleships — Oldenburg, Thuringen, Ostfriesland, Helgoland, Posen, Westfalen, Rheinland, and Nassau.

Light Cruisers — Stettin, Danzig, München, Lübeck, Stralsund, Augsburg, Kolberg, and Stuttgart.

And in addition forty-two modern destroyers and fifty modern torpedo boats, as chosen by the Governments of the principal Allied and Associated Powers.

Article 186.— On the coming into force of the present treaty the German Government must undertake, under the supervision of the Governments of the principal Allied and Associated Powers, the breaking up of all the German surface warships now under construction.

Article 187.— The German auxiliary cruisers and fleet auxiliaries enumerated below will be disarmed and treated as merchant ships.

Ships interned in neutral countries: Berlin, Santa Fé, Seydlitz, Yorck.

Ships interned in Germany: Ammon, Fürst Bülow, Answald, Gertrud, Bosnia, Kigoma, Cordoba, Rugia, Cassel, Santa Elena, Dania, Schleswig, Rio Negro, Möwe, Rio Pardo, Sierra Ventana, Santa Cruz, Chemnitz, Schwaben, Emil Georg von Strauss, Solingen, Hapsburg, Steigerwald, Meteor, Franken, Waltraute Gundomar, Scharnhorst.

Article 188.— On the expiration of one month from the coming into force of the present treaty all German submarines, salvage vessels, and docks for submarines, including the tubular dock, must have been handed over to the Governments of the principal Allied and Associated Powers. Such of these submarines, vessels, and docks as are considered by said Government to be fit to proceed under their own power or to be towed shall be taken by the German Government into such allied ports as have been indicated. The remainder, and also those in course of construction, shall be broken up entirely by the German Government under the supervision of the said Governments. The breaking up must be completed within three months at the most after the coming into force of the present treaty.

Article 189.— Articles, machinery, and material arising from the breaking up of German warships of all kinds, whether surface vessels or submarines, may not be used except for purely industrial or commercial purposes. They may not be sold or disposed of to foreign countries.

Article 190.— Germany is forbidden to construct or acquire any warships other than those intended to replace the units in commission provided for in Article 181 of the present treaty. The warships intended for replacement purposes as above shall not exceed the following displacement: Armored ships, 10,000 tons; light cruisers, 6,000 tons; destroyers, 800 tons; torpedo boats, 200 tons. Except where a ship has been lost, units of the different classes shall only be replaced at the end of a period of twenty years in the case of battleships and cruisers, and fifteen years in the case of destroyers and torpedo boats, counting from the launching of the ship.

Article 191.— The construction or acquisition of any submarine, even for commercial purposes, shall be forbidden in Germany.

Article 192.— The warships in commission of the German fleet must only have on board or in reserve the allowance of arms, munitions, and war material fixed by the principal Allied and Associated Powers. Within a month from the fixing of the quantities as above, arms, munitions and war material of all kinds, including mines and torpedoes, now in the hands of the German Government and in excess of the said quantities, shall be surrendered to the Governments of the said powers at places to be indicated by them. Such arms, munitions and war material will be destroyed or rendered useless. All other stocks, depots or reserves of arms, munitions or naval war material of all kinds are forbidden. The manufacture of these articles in German territory for, and their export to, foreign countries shall be forbidden.

Article 193.— On the coming into force of the present treaty Germany will forthwith sweep up the mines in the following areas in the North Sea to the eastward of longitude 4 degrees 00 minutes east of Greenwich: (1) Between parallels of latitude 53 degrees 00 minutes N. and 59 degrees 00 minutes N.; (2) to the northward of latitude 60 degrees 30 minutes N. Germany must keep these areas free from mines. Germany must also sweep and keep free from mines such areas in the Baltic as may ultimately be notified by the Governments of the principal Allied and Associated Powers.

Article 194.— The personnel of the German Navy shall be recruited entirely by voluntary engagements entered into for a minimum period of twenty-five con-

secutive years for officers and warrant officers, and twelve consecutive years for petty officers and men. The number engaged to replace those discharged for any reason before the expiration of their term of service must not exceed 5 per cent. per annum of the totals laid down in this section. (Article 183.)

The personnel discharged from the navy must not receive any kind of naval or military training or undertake any further service in the navy or army. Officers belonging to the German Navy and not demobilized must engage to serve till the age of 45 unless discharged for sufficient reasons. No officer or man of the German mercantile marine shall receive any training in the navy.

Article 195.— In order to insure free passage into the Baltic to all nations, Germany shall not erect any fortifications in the area comprised between latitudes 55.27 north and 54.00 north and longitudes 9.00 east and 16.00 east of the meridian of Greenwich, nor install any guns commanding the maritime routes between the North Sea and the Baltic. The fortifications now existing in this area shall be demolished and the guns removed under the supervision of the allied Governments and in periods to be fixed by them. The German Government shall place at the disposal of the Governments of the principal Allied and Associated Powers all hydrographical information now in its possession concerning the channels and adjoining waters between the Baltic and the North Sea.

Article 196.— All fortified works and fortifications other than those mentioned in Article 195 and in Part III (political clauses for Europe), Section XIII, (Heligoland,) now established within fifty kilometers of the German coast or on German islands off that coast, shall be considered of a defensive nature and may remain in their existing condition. No new fortifications shall be constructed within these limits. The armament of these defenses shall not exceed, as regards the number and calibre of guns, those in position at the date of the coming into force of the present treaty. The German Government shall communicate forthwith particulars thereof to all the European Governments. On the expiration of a period of two months from the coming into force of the present treaty the stocks of ammunition for these guns shall be reduced to and maintained at a maximum figure of fifteen hundred rounds per piece for calibres of 4.1 inch and under, and five hundred rounds per piece for higher calibres.

Article 197.— During the three months following the coming into force of the present treaty the German high-power wireless telegraphy stations at Nauen, Hanover, and Berlin shall not be used for the transmission of messages concerning naval, military, or political questions of interest to Germany or any State which has been allied to Germany in the war, without the assent of the Governments of the principal Allied and Associated Powers. These stations may be used for commercial purposes, but only under the supervision of the said Governments, who will decide the wave length to be used. During the same period Germany shall not build any more high-power wireless telegraphy stations in her own territory or that of Austria, Hungary, Bulgaria, or Turkey.

SECTION III.—AIR CLAUSES.

Article 198.— The armed forces of Germany must not include any military or naval air forces. Germany may, during a period not extending beyond Oct. 1, 1919, maintain a maximum number of 100 seaplanes or flying boats, which shall be exclusively employed in searching for submarine mines, shall be furnished with the necessary equipment for this purpose, and shall in no case carry arms, munitions, or bombs of any nature whatever. In addition to the engines installed in the seaplanes or flying boats above mentioned, one spare engine may be provided for each engine of each of these craft. No dirigible shall be kept.

Article 199.— Within two months from the coming into force of the present treaty the personnel of the air forces on the rolls of the German land and sea forces shall be demobilized. Up to the 1st of October, 1919, however, Germany may keep and maintain a total number of 1,000 men, including officers, for the whole of the cadres and personnel, flying and non-flying, of all formations and establishments.

Article 200.— Until the complete evacuation of German territory by the Allied and Associated troops, the aircraft of the Allied and Associated Powers shall enjoy in Germany freedom of passage through the air, freedom of transit and of landing.

Article 201.— During the six months following the coming into force of the present treaty the manufacture and importation of aircraft, parts of aircraft, engines for aircraft, and parts of engines for aircraft shall be forbidden in all German territory.

Article 202.— On the coming into force of the present treaty all military and naval aeronautical material, except the machines mentioned in the second and third paragraphs of Article 198, must be delivered to the Governments of the principal Allied and Associated Powers. Delivery must be effected at such places as the said Governments may select, and must be completed within three months. In particular, this material will include all items under the following heads, which are or have been in use or were designed for warlike purposes:

Complete airplanes and seaplanes, as well as those being manufactured, repaired, or assembled.

Dirigibles able to take the air being manufactured, repaired, or assembled.

Plant for the manufacture of hydrogen.

Dirigible sheds and shelters of every kind for aircraft.

Pending their delivery, dirigibles will, at the expense of Germany, be maintained inflated with hydrogen; the plant for the manufacture of hydrogen, as well as the sheds for dirigibles, may, at the discretion of said powers, be left to Germany until the time when the dirigibles are handed over.

Engines for aircraft.

Nacelles and fuselages.

Armament, (guns, machine guns, light machine guns, bomb-dropping apparatus, torpedo-dropping apparatus, synchronization apparatus, aiming apparatus).

Munitions, (cartridges, shells, bombs, loaded or unloaded, stocks of explosives or of material for their manufacture).

Instruments for use on aircraft.

Wireless apparatus and photographic or cinematograph apparatus for use on aircraft.

Component parts of any of the items under the preceding heads.

The material referred to above shall not be removed without special permission from the said Governments.

SECTION IV.— INTERALLIED COMMISSIONS OF CONTROL.

Article 203.— All the military, naval, and air clauses contained in the present treaty, for the execution of which a time limit is prescribed, shall be executed by Germany under the control of interallied commissions specially appointed for this purpose by the principal Allied and Associated Powers.

Article 204.— The Interallied Commissions of Control will be specially charged with the duty of seeing to the complete execution of the delivery, destruction, demolition, and rendering things useless to be carried out at the expense of the German Government in accordance with the present treaty. They will communicate to the German authorities the decisions which the principal Allied and Associated Powers have reserved the right to take, or which the execution of the military, naval, and air clauses may necessitate.

Article 205.— The Interallied Commissions of Control may establish their organizations at the seat of the Central German Government. They shall be entitled as often as they think desirable to proceed to any point whatever in German territory, or to send subcommissions, or to authorize one or more of their members to go, to any such point.

Article 206.— The German Government must give all necessary facilities for the accomplishment of their missions to the Interallied Commissions of Control and to their members. It shall attach a qualified representative to each Interallied Commission of Control for the purpose of receiving the communications which the commission may have to address to the German Government, and of supplying or procuring for the commission all information or documents which may be required. The German Government must in all cases furnish at its own cost all labor and material required to effect the deliveries and the work of destruction, dismantling, demolition, and of rendering things useless, provided for in the present treaty.

Article 207.— The upkeep and cost of the Commissions of Control and the expenses involved by their work shall be borne by Germany.

Article 208.— The Military Interallied Commission of Control will represent the Governments of the principal Allied and Associated Powers in dealing with the German Government in all matters concerning the execution of the military clauses. In particular it will be its duty to receive from the German Government the notifications relating to the location of the stocks and depots of munitions, the armaments of the fortified works, fortresses and forts which Germany is allowed to retain, and the location of the works or factories

for the production of arms, munitions and war material and their operations. It will take delivery of the arms, munitions, and war material, will select the points where such delivery is to be effected, and will supervise the works of destruction and demolition and of rendering things useless which are to be carried out in accordance with the present treaty. The German Government must furnish to the Military Interallied Commission of Control all such information and documents as the latter may deem necessary to insure the complete execution of the military clauses, and in particular all legislative and administrative documents and regulations.

Article 209.— The Naval Interallied Commission of Control will represent the Governments of the principal Allied and Associated Powers in dealing with the German Government in all matters concerning the execution of the naval clauses. In particular it will be its duty to proceed to the building yards and to supervise the breaking up of the ships which are under construction there, to take delivery of all surface ships or submarines, salvage ships, docks and the tubular dock, and to supervise the destruction and breaking up provided for. The German Government must furnish to the Naval Interallied Commission of Control all such information and documents as the commission may deem necessary to insure the complete execution of the naval clauses, in particular the designs of the warships, the composition of their armaments, the details and models of the guns, munitions, torpedoes, mines, explosives, wireless telegraphic apparatus and in general everything relating to naval war material, as well as all legislative or administrative documents or regulations.

Article 210.— The Aeronautical Interallied Commission of Control will represent the Governments of the principal Allied and Associated Powers in dealing with the German Government in all matters concerning the execution of the air clauses. In particular it will be its duty to make an inventory of the aeronautical material existing in German territory, to inspect airplane, balloon, and motor manufactories, and factories producing arms, munitions, and explosives capable of being used by aircraft, to visit all aerodromes, sheds, landing grounds, parks, and depots, to authorize, where necessary, a removal of material, and to take delivery of such material. The German Government must furnish to the Aeronautical Interallied Commission of Control all such information and legislative, administrative or other documents which the commission may consider necessary to insure the complete execution of the air clauses, and, in particular, a list of the personnel belonging to all the German air services, and of the existing material as well as of that in process of manufacture or on order, and a list of all establishments working for aviation, of their positions, and of all sheds and landing grounds.

SECTION V.— GENERAL ARTICLES.

Article 211.— After the expiration of a period of three months from the coming into force of the present treaty, the German laws must have been modified and shall be maintained in conformity with this part of the present treaty. Within the same period all the administrative or other measures relating to the execution of this part of the treaty must have been taken.

Article 212.— The following portions of the armistice of Nov. 11, 1918: Article VI, the first two and the sixth and seventh paragraphs of Article VII, Article IX, Clauses I, II, and V of Annex No. 2 and the protocol, dated April 4, 1919, supplementing the armistice of Nov. 11, 1918, remain in force so far as they are not inconsistent with the above stipulations.

Article 213.— So long as the present treaty remains in force, Germany undertakes to give every facility for any investigation which the Council of the League of Nations, acting if need be by a majority vote, may consider necessary.

PART VI.— PRISONERS OF WAR AND GRAVES.

SECTION I.— PRISONERS OF WAR.

Article 214.— The repatriation of prisoners of war and interned civilians shall take place as soon as possible after the coming into force of the present treaty and shall be carried out with the greatest rapidity.

Article 215.— The repatriation of German prisoners of war and interned civilians shall, in accordance with Article 214, be carried out by a commission composed of representatives of the Allied and Associated Powers on the one part, and of the German Government on the other part.

For each of the Allied and Associated Powers a subcommission composed exclusively of representatives of the interested powers and of delegates of the German Government shall regulate the details of carrying into effect the repatriation of the prisoners of war.

Article 216.— From the time of their delivery into the hands of the German authorities the prisoners of war and interned civilians are to be returned without delay to their homes by the said authorities. Those among them who before the war were habitually resident in territory occupied by the troops of the Allied and Associated Powers are likewise to be sent to their homes, subject to the consent and control of the military authorities of the Allied and Associated Armies of Occupation.

Article 217.— The whole cost of repatriation from the moment of starting shall be borne by the German Government, who shall also provide the land and sea transport and staff considered necessary by the commission referred to in Article 215.

Article 218.— Prisoners of war and interned civilians awaiting disposal or undergoing sentences for offenses against discipline shall be repatriated irrespective of the completion of their sentence or of the proceedings pending against them.

This stipulation shall not apply to prisoners of war and interned civilians punished for offenses committed subsequent to May 1, 1919.

During the period pending their repatriation all prisoners of war and interned civilians shall remain subject to the existing regulations, more especially as regards work and discipline.

Article 219.— Prisoners of war and interned civilians who are awaiting disposal or undergoing sentence for offenses other than those against discipline may be detained.

Article 220.— The German Government undertakes to admit to its territory without distinction all persons liable to repatriation.

Prisoners of war or other German nationals who do not desire to be repatriated may be excluded from repatriation; but the Allied and Associated Governments reserve to themselves the right either to repatriate them or to take them to a neutral country or to allow them to reside in their own territories.

The German Government undertakes not to institute any exceptional proceedings against these persons or their families nor to take any repressive or vexatious measures of any kind whatsoever against them on this account.

Article 221.— The Allied and Associated Governments reserve the right to make the repatriation of German prisoners of war or German nationals in their hands conditional upon the immediate notification and release by the German Government of any prisoners of war who are nationals of the Allied and Associated Powers and may still be in Germany.

Article 222.— Germany undertakes:

1. To give every facility to the commissions to inquire into the cases of those who cannot be traced; to furnish such commissions with all necessary means of transport; to allow them access to camps, prisons, hospitals, and all other places; and to place at their disposal all documents, whether public or private, which would facilitate their inquiries.

2. To impose penalties upon any German officials or private persons who have concealed the presence of any nationals of any of the Allied and Associated Powers, or have neglected to reveal the presence of any such after it had come to their knowledge.

Article 223.— Germany undertakes to restore without delay from the date of the coming into force of the present treaty all articles, money, securities, and documents which have belonged to nationals of the Allied and Associated Powers and which have been retained by the German authorities.

Article 224.— The high contracting parties waive reciprocally all repayment of sums due for the maintenance of prisoners of war in their respective territories.

SECTION II.— GRAVES.

Article 225.— The Allied and Associated Governments and the German Government will cause to be respected and maintained the graves of the soldiers and sailors buried in their respective territories.

They agree to recognize any commission appointed by an Allied or Associated Government for the purpose of identifying, registering, caring for, or erecting suitable memorials over the said graves and to facilitate the discharge of its duties.

Furthermore, they agree to afford, so far as the provisions of the laws and the requirements of public health allow, every facility for giving effect to requests that the bodies of their soldiers and sailors may be transferred to their own countries.

Article 226.— The graves of prisoners of war and

interned civilians who are nationals of the different belligerent States and have died in captivity shall be properly maintained in accordance with Article 225 of the present treaty.

The Allied and Associated Governments on the one part, and the German Government on the other part, reciprocally undertake also to furnish to each other:

1. A complete list of those who have died, together with all information useful for identification.

2. All information as to the number and position of the graves of all those who have been buried without identification.

PART VII.— PENALTIES.

Article 227.— The Allied and Associated Powers publicly arraign William II of Hohenzollern, formerly German Emperor, for a supreme offense against international morality and the sanctity of treaties.

A special tribunal will be constituted to try the accused, thereby assuring him the guarantees essential to the right of defense. It will be composed of five judges, one appointed by each of the following powers: The United States of America, Great Britain, France, Italy, and Japan.

In its decision, the tribunal will be guided by the highest motives of international policy with a view to vindicating the solemn obligations of international undertakings and the validity of international morality. It will be its duty to fix the punishment which it considers should be imposed.

The Allied and Associated Powers will address a request to the Government of the Netherlands for the surrender to them of the ex-Emperor in order that he may be put on trial.

Article 228.— The German Government recognizes the right of the Allied and Associated Powers to bring before military tribunals persons accused of having committed acts in violation of the laws and customs of war. Such persons shall, if found guilty, be sentenced to punishments laid down by law. This provision will apply, notwithstanding any proceedings or prosecution before a tribunal in Germany or in the territory of her allies.

The German Government shall hand over to the Allied and Associated Powers or to such one of them as shall so request, all persons accused of having committed an act in violation of the law and customs of war who are specified either by name or by the rank, office, or employment which they held under the German authorities.

Article 229.— Persons guilty of criminal acts against the nationals of one of the Allied and Associated Powers will be brought before the military tribunals of that power.

Persons guilty of criminal acts against the nationals of more than one of the Allied and Associated Powers will be brought before military tribunals composed of members of the military tribunals of the powers concerned.

In every case the accused will be entitled to name his own counsel.

Article 230.— The German Government undertakes to furnish all documents and information of every kind, the production of which may be considered necessary to insure the full knowledge of the incriminating acts, the discovery of offenders, and the just appreciation of responsibility.

PART VIII.— REPARATION.

SECTION I.— GENERAL PROVISIONS.

Article 231.— The Allied and Associated Governments affirm, and Germany accepts, the responsibility of Germany and her allies for causing all the loss and damage to which the Allied and Associated Governments and their nationals have been subjected as a consequence of the war imposed upon them by the aggression of Germany and her allies.

Article 232.— The Allied and Associated Governments recognize that the resources of Germany are not adequate, after taking into account permanent diminutions of such resources which will result from other provisions of the present treaty, to make complete reparation for all such loss and damage.

The Allied and Associated Governments, however, require, and Germany undertakes, that she will make compensation for all damage done to the civilian population of the Allied and Associated Powers and to their property during the period of the belligerency of each as an Allied or Associated Power against Germany by such aggression by land, by sea, and from the air, and in general all damage as defined in Annex I hereto.

In accordance with Germany's pledges, already given as to complete restoration for Belgium, Germany undertakes, in addition to the compensation for damage elsewhere in this chapter provided for, as a consequence of the violation of the treaty of 1839, to make reimbursement of all sums which Belgium has borrowed from the Allied and Associated Governments up to Nov. 11, 1918, together with interest at the rate of 5 per cent. per annum on such sums. This amount shall be determined by the Reparation Commission, and the German Government undertakes thereupon forthwith to make a special issue of bearer bonds to an equivalent amount payable in marks gold, on May 1, 1926, or, at the option of the German Government, on the 1st of May in any year up to 1926. Subject to the foregoing, the form of such bonds shall be determined by the Reparation Commission. Such bonds shall be handed over to the Reparation Commission, which has authority to take and acknowledge receipt thereof on behalf of Belgium.

Article 233.— The amount of the above damage for which compensation is to be made by Germany shall be determined by an interallied commission, to be called the Reparation Commission, and constituted in the form and with the power set forth hereunder and in Annexes II to VII inclusive hereto.

This commission shall consider the claims and give to the German Government a just opportunity to be heard.

The findings of the commission as to the amount of damage defined as above shall be concluded and notified to the German Government on or before the 1st May, 1921, as representing the extent of that Government's obligations.

The commission shall concurrently draw up a schedule of payments prescribing the time and manner for securing and discharging the entire obligation within a period of thirty years from the 1st May, 1921. If, however, within the period mentioned, Germany fails to discharge her obligations, any balance remaining unpaid may, within the discretion of the commission, be postponed for settlement in subsequent years, or may be handled otherwise in such manner as the Allied and Associated Governments, acting in accordance with the procedure laid down in this part of the present treaty, shall determine.

Article 234.— The Reparation Commission shall after the 1st May, 1921, from time to time, consider the resources and capacity of Germany and, after giving her representatives a just opportunity to be heard, shall have discretion to extend the date and to modify the form of payments, such as are to be provided for in accordance with Article 233; but not to cancel any part, except with the specific authority of the several Governments represented upon the commission.

Article 235.— In order to enable the Allied and Associated Powers to proceed at once to the restoration of their industrial and economic life, pending the full determination of their claims, Germany shall pay in such installments and in such manner (whether in gold, commodities, ships, securities, or otherwise) as the Reparation Commission may fix, during 1919, 1920, and the first four months of 1921, the equivalent of 20,000,000,000 gold marks.

Out of this sum the expenses of the armies of occupation subsequent to the armistice of the 11th November, 1918, shall first be met, and such supplies of food and raw materials as may be judged by the Governments of the principal Allied and Associated Powers to be essential to enable Germany to meet her obligations for reparation may also, with the approval of the said Governments, be paid for out of the above sum. The balance shall be reckoned toward liquidation of the amounts due for reparation.

Germany shall further deposit bonds as prescribed in Paragraph 12 (c) of Annex II hereto.

Article 236.— Germany further agrees to the direct application of her economic resources to reparation as specified in Annexes III, IV, V, and VI, relating respectively to merchant shipping, to physical restoration, and to coal and derivatives of coal, and to dyestuffs and other chemical products; provided always that the value of the property transferred and any services rendered by her under these annexes, assessed in the manner therein prescribed, shall be credited to her toward liquidation of her obligations under the above articles.

Article 237.— The successive installments, including the above sum, paid over by Germany in satisfaction of the above claims, will be divided by the Allied and Associated Governments in proportions which have been determined upon by them in advance on a basis of general equity and of the rights of each.

For the purposes of this division the value of

property transferred and services rendered under Article 243 and under Annexes III, IV, V, VI, and VII shall be reckoned in the same manner as cash payments effected in that year.

Article 238.— In addition to the payments mentioned above, Germany shall effect, in accordance with the procedure laid down by the Reparation Commission, restitution in cash of cash taken away, seized, or sequestrated, and also restitution of animals, objects of every nature, and securities taken away, seized, or sequestrated, in the cases in which it proves possible to identify them in territory belonging to Germany or her allies.

Until this procedure is laid down restitution will continue in accordance with the provisions of the armistice of 11th of November, 1918, and its renewals and the protocols thereto.

Article 239.— Germany undertakes to make forthwith the restitution contemplated by Article 238 and to make the payments and deliveries contemplated by Articles 233, 234, 235, and 236.

Article 240.— Germany recognizes the commission providing for by Article 233 as the same may be constituted by the Allied and Associated Governments in accordance with Annex II and agrees irrevocably to the possession and exercise by such commission of the power and authority given to it under the present treaty. The German Government will supply to the commission all the information which the commission may require relative to the financial situation and operations and to the property, productive capacity, and stocks and current production of raw materials and manufactured articles of Germany and her nationals, and, further, any information relative to military operations which in the judgment of the commission may be necessary for the assessment of Germany's liability for reparation as defined in Annex I.

The German Government will accord to the members of the commission and its authorized agents the same rights and immunities as are enjoyed in Germany by duly accredited diplomatic agents of friendly powers. Germany further agrees to provide for the salaries and expenses of the commission, and of such staff as it may employ.

Article 241.— Germany undertakes to pass, issue, and maintain in force any legislation, orders, and decrees that may be necessary to give complete effect to these presents.

Article 242.— The provisions of this part of the present treaty do not apply to the property, rights, and interests referred to in Sections III and IV of Part X (economic clauses) of the present treaty, nor to the product of their liquidation, except so far as concerns any final balance in favor of Germany under Article 243 (a).

Article 243.— The following shall be reckoned as credits to Germany in respect of her reparation obligations:

(a) Any final balance in favor of Germany under Sections III and IV of Part X (economic clauses) and Section V (Alsace-Lorraine) of Part III, (political clauses for Europe).

(b) Amounts due to Germany in respect of transfers under Part IX, (financial clauses), Part XII, (ports, waterways, and railways), and Section IV (Sarre Basin) of Part III, (political clauses for Europe).

(c) Amounts which in the judgment of the Reparation Commission should be credited to Germany on account of any other transfers under the present treaty of property, rights, concessions, or other interests.

In no case, however, shall credit be given for property restored in accordance with Article 238.

Article 244.— The transfer of the German submarine cables which do not form the subject of particular provisions of the present treaty is regulated by Annex VII hereto.

ANNEX I.

Compensation may be claimed from Germany under Article 232 above in respect of the total damage under the following categories:

1. Damage to injured persons and to surviving dependents by personal injury to or death of civilians caused by acts of war, including bombardments or other attacks on land, on sea, or from the air, and all the direct consequences thereof, and of all operations of war by the two groups of belligerents wherever arising.

2. Damage caused by Germany or her allies to civilian victims of acts of cruelty, violence, or maltreatment, (including injuries to life or health as a consequence of imprisonment, deportation, internment, or evacuation, of exposure at sea, or of being forced to labor by Germany or her allies), wherever arising, and to the surviving dependents of such victims.

3. Damage caused by Germany or her allies in their own territory or in occupied or invaded territory to civilian victims of all acts injurious to health or capacity to work, or to honor, as well as to the surviving dependents of such victims.

4. Damage caused by any kind of maltreatment of prisoners of war.

5. As damage caused to the peoples of the Allied and Associated Powers, all pensions and compensations in the nature of pensions to naval and military victims of war, (including members of the air forces), whether mutilated, wounded, sick, or invalided, and to the dependents of such victims, the amount due to the Allied and Associated Governments being calculated for each of them as being the capitalized cost of such pensions and compensations at the date of the coming into force of the present treaty, on the basis of the scales in force in France at such date.

6. The cost of assistance by the Governments of the Allied and Associated Powers to prisoners of war and to their families and dependents.

7. Allowances by the Governments of the Allied and Associated Powers to the families and dependents of mobilized persons or persons serving with the forces, the amount due to them for each calendar year in which hostilities occurred being calculated for each Government on the basis of the average scale for such payments in force in France during that year.

8. Damage caused to civilians by being forced by Germany or her allies to labor without just remuneration.

9. Damage in respect of all property, wherever situated, belonging to any of the Allied or Associated States or their nationals, with the exception of naval and military works or materials, which have been carried off, seized, injured, or destroyed by the acts of Germany or her allies on land, on sea, or from the air, or damage directly in consequence of hostilities or of any operations of war.

10. Damage in the form of levies, fines and other similar exactions imposed by Germany or her allies upon the civilian population.

ANNEX II.

1. The commission referred to in Article 233 shall be called "The Reparation Commission," and is hereinafter referred to as "the commission."

2. Delegates to the commission shall be nominated by the United States of America, Great Britain, France, Italy, Japan, Belgium, and the Serb-Croat-Slovene State. Each of these powers will appoint one delegate and also one assistant delegate, who will take his place in case of illness or necessary absence, but at other times will only have the right to be present at proceedings without taking any part therein. On no occasion shall the delegates of more than five of the above powers have the right to take part in the proceedings of the commission and to record their votes. The delegates of the United States, Great Britain, France, and Italy shall have this right on all occasions. The delegate of Belgium shall have this right on all occasions other than those referred to below. The delegate of Japan shall have this right on occasions when questions relating to damage at sea and questions arising under Article 260 of Part IX (financial clauses) in which Japanese interests are concerned are under consideration. The delegate of the Serb-Croat-Slovene State shall have this right when questions relating to Austria, Hungary, or Bulgaria are under consideration.

Each Government represented on the commission shall have the right to withdraw therefrom upon twelve months notice, filed with the commission and confirmed in the course of the sixth month after the date of the original notice.

3. Such of the other Allied and Associated Powers as may be interested shall have the right to appoint a delegate to be present and act as assessor only while their respective claims and interests are under examination or discussion, but without the right to vote.

4. In case of the death, resignation or recall of any delegate, assistant delegate, or assessor, a successor to him shall be nominated as soon as possible.

5. The commission will have its principal permanent bureau in Paris and will hold its first meeting in Paris as soon as practicable after the coming into force of the present treaty, and thereafter will meet in such place or places and at such time as it may deem convenient and as may be necessary for the most expeditious discharge of its duties.

6. At its first meeting the commission shall elect from among the delegates referred to above a Chairman and a Vice Chairman, who shall hold office for one year and shall be eligible for re-election. If a

vacancy in the Chairmanship or Vice Chairmanship should occur during the annual period the commission shall proceed to a new election for the remainder of the said period.

7. The commission is authorized to appoint all necessary officers, agents, and employes who may be required for the execution of its functions, and to fix their remuneration; to constitute committees, whose members need not necessarily be members of the commission, and to take all executive steps necessary for the purpose of discharging its duties, and to delegate authority and discretion to officers, agents, and committees.

8. All proceedings of the commission shall be private unless, on particular occasions, the commission shall otherwise determine for special reasons.

9. The commission shall be required, if the German Government so desire, to hear, within a period which it will fix from time to time, evidence and arguments on the part of Germany on any question connected with her capacity to pay.

10. The commission shall consider the claims and give to the German Government a just opportunity to be heard, but not to take any part whatever in the decisions of the commission. The commission shall afford a similar opportunity to the allies of Germany when it shall consider that their interests are in question.

11. The commission shall not be bound by any particular code or rules of law or by any particular rule of evidence or of procedure, but shall be guided by justice, equity, and good faith. Its decisions must follow the same principles and rules in all cases where they are applicable. It will establish rules relating to methods of proof of claims. It may act on any trustworthy modes of computation.

12. The commission shall have all the powers conferred upon it, and shall exercise all the functions assigned to it by the present treaty.

The commission shall in general have wide latitude as to its control and handling of the whole reparation problem as dealt with in this part of the present treaty, and shall have authority to interpret its provisions. Subject to the provisions of the present treaty, the commission is constituted by the several Allied and Associated Governments referred to in Paragraphs 2 and 3 above as the exclusive agency of the said Governments respectively for receiving, selling, holding, and distributing the reparation payments to be made by Germany under this part of the present treaty. The commission must comply with the following conditions and provisions:

(a) Whatever part of the full amount of the proved claims is not paid in gold, or in ships, securities, and commodities or otherwise, Germany shall be required, under such conditions as the commission may determine, to cover by way of guarantee by an equivalent issue of bonds, obligations, or otherwise, in order to constitute an acknowledgment of the said part of the debt:

(b) In periodically estimating Germany's capacity to pay, the commission shall examine the German system of taxation first to the end that the sums for reparation which Germany is required to pay shall become a charge upon all her revenues prior to that for the service or discharge of any domestic loan, and, secondly, so as to satisfy itself that, in general, the German scheme of taxation is fully as heavy proportionately as that of any of the powers represented on the commission.

(c) In order to facilitate and continue the immediate restoration of the economic life of the Allied and Associated countries, the commission will, as provided in Article 235, take from Germany by way of security for and acknowledgment of her debt a first installment of gold bearer bonds free of all taxes or charges of every description established or to be established by the Government of the German Empire or of the German States, or by any authority subject to them; these bonds will be delivered on account and in three portions, the marks gold being payable in conformity with Article 262 of Part IX (financial clauses) of the present treaty, as follows:

First. To be issued forthwith, 20,000,000,000 marks gold bearer bonds, payable not later than May 1, 1921, without interest. There shall be specially applied toward the amortization of these bonds the payments which Germany is pledged to make in conformity with Article 235, after deduction of the sums used for the reimbursement of expenses of the armies of occupation and for payment of foodstuffs and raw materials. Such bonds as have not been redeemed by May 1, 1921, shall then be exchanged for new bonds of the same type as those provided for below, (Paragraph 12, c. second).

Second. To be issued forthwith, further 40,000,000,000 marks gold bearer bonds, bearing interest at 2½ per cent. per annum between 1921 and 1926, and thereafter at 5 per cent. per annum, with an additional 1 per cent. for amortization beginning in 1926 on the whole amount of the issue.

Third. To be delivered forthwith a covering undertaking in writing, to issue when, but not until, the commission is satisfied that Germany can meet such interest and sinking fund obligations, a further installment of 40,000,000,000 marks gold 5 per cent. bearer bonds, the time and mode of payment of principal and interest to be determined by the commission.

The dates for payment of interest, the manner of applying the amortization fund, and all other questions relating to the issue, management, and regulation of the bond issue shall be determined by the commission from time to time.

Further issues by way of acknowledgment and security may be required as the commission subsequently determines from time to time.

(d) In the event of bonds, obligations, or other evidence of indebtedness issued by Germany by way of security for or acknowledgment of her reparation debt being disposed of outright, not by way of pledge, to persons other than the several Governments in whose favor Germany's original reparation indebtedness was created, an amount of such reparation indebtedness shall be deemed to be extinguished corresponding to the nominal value of the bonds, etc., so disposed of outright, and the obligation of Germany in respect of such bonds shall be confined to her liabilities to the holders of the bonds, as expressed upon their face.

(e) The damage for repairing, reconstructing, and rebuilding property in the invaded and devastated districts, including reinstallation of furniture, machinery and other equipment, will be calculated according to the cost at the dates when the work is done.

(f) Decisions of the commission relating to the total or partial cancellation of the capital or interest of any verified debt of Germany must be accompanied by a statement of its reasons.

13. As to voting, the commission will observe the following rules:

When a decision of the commission is taken, the votes of all the delegates entitled to vote, or in the absence of any of them, of their assistant delegates, shall be recorded. Abstention from voting is to be treated as a vote against the proposal under discussion. Assessors have no vote.

On the following questions unanimity is necessary:

(a) Questions involving the sovereignty of any of the Allied and Associated Powers, or the cancellation of the whole or any part of the debt or obligations of Germany.

(b) Questions of determining the amount and conditions of bonds or other obligations to be issued by the German Government and of fixing the time and manner for selling, negotiating, or distributing such bonds.

(c) Any postponement, total or partial, beyond the end of 1930, of the payment of installments falling due between the 1st May, 1921, and the end of 1926 inclusive.

(d) Any postponement, total or partial, of any installment falling due after 1926 for a period exceeding three years.

(e) Questions of applying in any particular case a method of measuring damages different from that which has been previously applied in a similar case.

(f) Questions of the interpretation of the provisions of this part of the present treaty.

All other questions shall be decided by the vote of a majority.

In case of any difference of opinion among the delegates, which cannot be solved by reference to their Governments, upon the question whether a given case is one which requires a unanimous vote for its decision or not, such difference shall be referred to the immediate arbitration of some impartial person to be agreed upon by the Governments, whose award the Allied and Associated Governments agree to accept.

14. Decisions of the commission, in accordance with the powers conferred upon it, shall forthwith become binding and may be put into immediate execution without further proceedings.

15. The commission will issue to each of the interested powers, in such form as the commission shall fix:

First. A certificate stating that it holds for the account of the said power bonds of the issues mentioned above, the said certificate, on the demand of the power concerned, being divisible in a number of parts not exceeding five:

Second. From time to time certificates stating the

goods delivered by Germany on account of her reparation debt which it holds for the account of the said power.

The said certificates shall be registered, and, upon notice to the commission, may be transferred by indorsement.

When bonds are issued for sale or negotiation, and when goods are delivered by the commission, certificates to an equivalent value must be withdrawn.

16. Interest shall be debited to Germany as from 1st May, 1921, in respect of her debt as determined by the commission, after allowing for sums already covered by cash payments or their equivalent, or by bonds issued to the commission, or under Article 243. The rate of interest shall be 5 per cent., unless the commission shall determine at some future time that circumstances justify a variation of this rate.

The commission, in fixing on 1st May, 1921, the total amount of the debt of Germany, may take account of interest due on sums arising out of the reparation of material damage as from 11th November, 1918, up to 1st May, 1921.

17. In case of default by Germany in the performance of any obligation under this part of the present treaty, the commission will forthwith give notice of such default to each of the interested powers and may make such recommendations as to the action to be taken in consequence of such default as it may think necessary.

18. The measures which the Allied and Associated Powers shall have the right to take, in case of voluntary default by Germany, and which Germany agrees not to regard as acts of war, may include economic and financial prohibitions and reprisals and in general such other measures as the respective Governments may determine to be necessary in the circumstances.

19. Payments required to be made in gold or its equivalent on account of the proved claims of the Allied and Associated Powers may at any time be accepted by the commission in the form of chattels, properties, commodities, businesses, rights, concessions, within or without German territories, ships, bonds, shares or securities of any kind, or currencies of Germany or other States, the value of such substitutes for gold being fixed at a fair and just amount by the commission itself.

20. The commission, in fixing or accepting payment in specified properties or rights, shall have due regard for any legal or equitable interests of the Allied and Associated Powers or of neutral powers or of their nationals therein.

21. No member of the commission shall be responsible, except to the Government appointing him, for any action or omission as such member. No one of the Allied or Associated Governments assumes any responsibility in respect of any other Government.

22. Subject to the provisions of the present treaty this annex may be amended by the unanimous decision of the Governments represented from time to time upon the commission.

23. When all the amounts due from Germany and her allies under the present treaty or the decisions of the commission have been discharged and all sums received, or their equivalents, shall have been distributed to the powers interested, the commission shall be dissolved.

ANNEX III.

1. Germany recognizes the right of the Allied and Associated Powers to the replacement, ton for ton (gross tonnage) and class for class, of all merchant ships and fishing boats lost or damaged owing to the war.

Nevertheless, and in spite of the fact that the tonnage of German shipping at present in existence is much less than that lost by the Allied and Associated Powers in consequence of the German aggression, the right thus recognized will be enforced on German ships and boats under the following conditions:

The German Government on behalf of themselves and so as to bind all other persons interested, cede to the Allied and Associated Governments the property in all the German merchant ships which are of 1,600 tons gross and upward; in one-half, reckoned in tonnage, of the ships which are between 1,000 tons and 1,600 tons gross; in one-quarter, reckoned in tonnage, of the steam trawlers, and in one-quarter, reckoned in tonnage, of the other fishing boats.

2. The German Government will, within two months of the coming into force of the present treaty, deliver to the Reparation Commission all the ships and boats mentioned in Paragraph 1.

3. The ships and boats mentioned in Paragraph 1 include all ships and boats which (a) fly, or may be entitled to fly, the German merchant flag; or (b) are owned by any German national, company, or corporation or by any company or corporation belonging to a country other than an Allied or Associated country and under the control or direction of German nationals; or (c) which are now under construction (1) in Germany, (2) in other than Allied or Associated countries for the account of any German national, company, or corporation.

4. For the purpose of providing documents of title for the ships and boats to be handed over as above mentioned the German Government will:

(a) Deliver to the Reparation Commission in respect of each vessel a bill of sale or other document of title evidencing the transfer to the commission of the entire property in the vessel free from all incumbrances, charges, and liens of all kinds, as the commission may require;

(b) Take all measures that may be indicated by the Reparation Commission for insuring that the ships themselves shall be placed at its disposal.

5. As an additional part of reparation, Germany agrees to cause merchant ships to be built in German yards for the account of the Allied and Associated Governments as follows:

(a) Within three months of the coming into force of the present treaty, the Reparation Commission will notify to the German Government the amount of tonnage to be laid down in German shipyards in each of the two years next succeeding the three months mentioned above:

(b) Within twenty-four months of the coming into force of the present treaty, the Reparation Commission will notify to the German Government the amount of tonnage to be laid down in each of the three years following the two years mentioned above:

(c) The amount of tonnage to be laid down in each year shall not exceed 200,000 tons, gross tonnage:

(d) The specifications of the ships to be built, the conditions under which they are to be built and delivered, the price per ton at which they are to be accounted for by the Reparation Commission, and all other questions relating to the accounting, ordering, building and delivery of the ships, shall be determined by the commission.

6. Germany undertakes to restore in kind and in normal condition of upkeep to the Allied and Associated Powers, within two months of the coming into force of the present treaty, in accordance with procedure to be laid down by the Reparation Commission, any boats and other movable appliances belonging to inland navigation which since the 1st August, 1914, have by any means whatever come into her possession or into the possession of her nationals, and which can be identified.

With a view to make good the loss in inland navigation tonnage, from whatever cause arising, which has been incurred during the war by the Allied and Associated Powers, and which cannot be made good by means of the restitution prescribed above, Germany agrees to cede to the Reparation Commission a portion of the German river fleet up to the amount of the loss mentioned above, provided that such cession shall not exceed 20 per cent. of the river fleet as it existed on the 11th November, 1918.

The condition of this session shall be settled by the arbitrators referred to in Article 339 of Part XII (ports, waterways and railways) of the present treaty, who are charged with the settlement of difficulties relating to the apportionment of river tonnage resulting from the new international régime applicable to certain river systems or from the territorial changes affecting those systems.

7. Germany agrees to take any measures that may be indicated to her by the Reparation Commission for obtaining the full title to the property in all ships which have been during the war transferred, or are in process of transfer, to neutral flags, without the consent of the Allied and Associated Governments.

8. Germany waives all claims of any description against the Allied and Associated Governments and their nationals in respect of the detention, employment, loss or damage of any German ships or boats, except when being made of payments due in respect of the employment of ships in conformity with the armistice agreement of the 13th January, 1919, and subsequent agreements.

The handing over of the ships of the German mercantile marine must be continued without interruption in accordance with the said agreement.

9. Germany waives all claims to vessels or cargoes sunk by or in consequence of naval action and subsequently salved, in which any of the Allied or associated Governments or their nationals may have any interest, either as owners, charterers, insurers or other-

wise, notwithstanding any decree of condemnation which may have been made by a prize court of Germany or of her allies.

ANNEX IV.

1. The Allied and Associated Powers require, and Germany undertakes, that, in part satisfaction of her obligations expressed in this part of the present treaty, she will, as hereinafter provided, devote her economic resources directly to the physical restoration of the invaded areas of the Allied and Associated Powers, to the extent that these powers may determine.

2. The Allied and Associated Governments may file with the Reparation Commission lists showing:

(a) Animals, machinery, equipment, tools, and like articles of commercial character, which have been seized, consumed, or destroyed by Germany or destroyed in direct consequence of military operations, and which such Governments, for the purpose of meeting immediate and urgent needs, desire to have replaced by animals and articles of the same nature which are in being in German territory at the date of the coming into force of the present treaty:

(b) Reconstruction materials, (stones, bricks, refractory bricks, tiles, wood, window glass, steel, lime, cement, etc.,) machinery, heating apparatus, furniture, and like articles of a commercial character which the said Governments desire to have produced and manufactured in Germany and delivered to them to permit of the restoration of the invaded areas.

3. The lists relating to the articles mentioned in 2 (a), above, shall be filed within sixty days after the date of the coming into force of the present treaty. The lists relating to the articles in 2 (b), above, shall be filed on or before Dec. 31, 1919. The lists shall contain all such details as are customary in commercial contracts dealing with the subject matter, including specifications, dates of delivery, (but not extending over more than four years,) and places of delivery, but not price or value, which shall be fixed as hereinafter provided by the commission.

4. Immediately upon the filing of such lists with the commission, the commission shall consider the amount and number of the materials and animals mentioned in the list provided for above which are to be required of Germany. In reaching a decision on this matter the commission shall take into account such domestic requirements of Germany as it deems essential for the maintenance of Germany's social and economic life, and the prices and dates at which similar articles can be obtained in the Allied and Associated countries as compared with those to be fixed for German articles, and the general interest of the Allied and Associated Governments that the industrial life of Germany be not so disorganized as to affect adversely the ability of Germany to perform the other acts of reparation stipulated for. Machinery, equipment, tools, and like articles of a commercial character in actual industrial use are not, however, to be demanded of Germany unless there is no free stock of such articles respectively which is not in use and is available, and then not in excess of 30 per cent. of the quantity of such articles in use in any one establishment or undertaking.

The commission shall give representatives of the German Government an opportunity and a time to be heard as to their capacity to furnish the said materials, articles, and animals. The decision of the commission shall thereupon and at the earliest possible moment be communicated to the German Government and to the several interested Allied and Associated Governments. The German Government undertakes to deliver the materials, articles, and animals as specified in the said communication, and the interested Allied and Associated Governments severally agree to accept the same, provided they conform to the specification given, or are not, in the judgment of the commission, unfit to be utilized in the work of reparation.

5. The commission shall determine the value to be attributed to the materials, articles, and animals to be delivered in accordance with the foregoing, and the Allied or Associated Power receiving the same agrees to be charged with such value, and the amount thereof shall be treated as a payment by Germany to be divided in accordance with Article 237 of this part of the present treaty.

In cases where the right to require physical restoration as above provided is exercised the commission shall insure that the amount to be credited against the reparation obligation of Germany shall be the fair value of work done or materials supplied by Germany and that the claim made by the interested power in respect of the damage so repaired by physical restoration shall be discharged to the extent of the proportion which the damage thus repaired bears to the whole of the damage thus claimed for.

6. As an immediate advance on account of the animals referred to in Paragraph 2 (a) above, Germany undertakes to deliver in equal monthly installments in the three months following the coming into force of the present treaty the following quantities of live stock:

First. To the French Government, 500 stallions, (3 to 7 years,) 30,000 fillies and mares, (18 months to 7 years,) type; Ardenias, Boulonnais, or Belgian; 2,000 bulls, (18 months to 3 years,) 90,000 milch cows, (2 to 6 years,) 1,000 rams, 100,000 sheep, 10,000 goats.

Second. To the Belgian Government, 200 stallions, (3 to 7 years,) large Belgian type; 5,000 mares, (3 to 7 years,) large Belgian type, 5,000 fillies, (18 months to 3 years,) large Belgian type; 2,000 bulls, (18 months to 3 years,) 50,000 milch cows, (2 to 6 years,) 40,000 heifers, 200 rams, 20,000 sheep, 15,000 sows.

The animals delivered shall be of average health and condition. To the extent that animals so delivered cannot be identified as animals taken away or seized, the value of such animals shall be credited against the reparation obligations of Germany in accordance with Paragraph 5 of this annex.

7. Without waiting for the decisions of the commission, referred to in Paragraph 4 of this annex, to be taken, Germany must continue the delivery to France of the agricultural material referred to in Article 3 of the renewal of the armistice of 16th January, 1919.

ANNEX V.

1. Germany accords the following options for the delivery of coal and derivatives of coal to the undermentioned signatories of the present treaty.

2. Germany undertakes to deliver to France 7,000,000 tons of coal per year for ten years. In addition, Germany undertakes to deliver to France annually for a period not exceeding ten years an amount of coal equal to the difference between the annual production before the war of the coal mines of the Nord and Pas de Calais, destroyed as a result of the war, and the production of the mines of the same area during the years in question; such delivery not to exceed 20,000,000 tons in any one year of the first five years, and 8,000,000 tons in any one year of the succeeding five years.

It is understood due diligence will be exercised in the restoration of the destroyed mines in the Nord and Pas de Calais.

3. Germany undertakes to deliver to Belgium 8,000,000 tons of coal annually for ten years.

4. Germany undertakes to deliver to Italy, up to the following quantities of coal:

July, 1919, to June, 1920, 4,500,000 tons.
July, 1920, to June, 1921, 6,000,000 tons.
July, 1921, to June, 1922, 7,500,000 tons.
July, 1922, to June, 1923, 8,000,000 tons.
July, 1923, to June, 1924, 8,500,000 tons.
and each of the following five years, 8,500,000 tons.

At least two-thirds of the actual deliveries to be land borne.

5. Germany further undertakes to deliver annually to Luxemburg, if directed by the Reparation Commission, a quantity of coal equal to the pre-war annual consumption of German coal in Luxemburg.

6. The prices to be paid for coal delivered under these options shall be as follows:

(a) For overland delivery, including delivery by barge, the German pithead price to German nationals, plus the freight to French, Belgian, Italian, or Luxemburg frontiers, provided the pithead price does not exceed the pithead price of British coal for export. In case of Belgian bunker coal, the price shall not exceed the Dutch bunker price. Railroad and barge tariffs shall not be higher than the lowest similar rates paid in Germany.

(b) For sea delivery, the German export price f. o. b. the German ports, or the British export price f. o. b. British ports, whichever may be lower.

7. The Allied and Associated Governments interested may demand the delivery in place of coal of metallurgical coke in the proportion of three tons of coke to four tons of coal.

8. Germany undertakes to deliver to France and to transport to the French frontier by rail or by water the following products during each of the three years following the coming into force of this treaty:

Benzol — 35,000 tons.
Coal tar — 50,000 tons.
Sulphate of ammonia — 30,000 tons.
All or part of the coal tar may, at the option of

the French Government, be replaced by corresponding quantities of products of distillation, such as light oils, heavy oils, anthracine, naphthaline, or pitch.

9. The price paid for coke and for the articles referred to in the preceding paragraphs shall be the same as the price paid by German nationals under the same conditions of shipment to the French frontier or to the German ports, and shall be subject to any advantages which may be accorded similar products furnished to German nationals.

10. The foregoing options shall be exercised through the intervention of the Reparation Commission, which, subject to the specific provisions hereof, shall have power to determine all questions relative to procedure and the qualities and quantities of products, the quantity of coke which may be substituted for coal, and the times and modes of delivery and payment. In giving notice to the German Government of the foregoing options the commission shall give at least 120 days' notice of deliveries to be made after the 1st January, 1920, and at least thirty days' notice of deliveries to be made between the coming into force of this treaty and the 1st January, 1920. Until Germany has received the demands referred to in this paragraph the provisions of the protocol of the 25th December, 1918, (execution of Article 6 of the armistice of the 11th November, 1918,) remain in force.

The notice to be given to the German Government of the exercise of the right of substitution accorded by Paragraphs 7 and 8 shall be such as the Reparation Commission may consider sufficient.

If the commission shall determine that the full exercise of the foregoing options would interfere unduly with the industrial requirements of Germany, the commission is authorized to postpone or to cancel deliveries, and in so doing to settle all questions of priority, but the coal to replace coal from destroyed mines shall receive priority over other deliveries.

ANNEX VI.

1. Germany accords to the Reparation Commission an option to require as part of reparation the delivery by Germany of such quantities and kinds of dyestuffs and chemical drugs as the commission may designate, not exceeding 50 per cent. of the total stock of each and every kind of dyestuff and chemical drug in Germany or under German control at the date of the coming into force of the present treaty.

This option shall be exercised within sixty days of the receipt by the commission of such particulars as to stocks as may be considered necessary by the commission.

2. Germany further accords to the Reparation Commission an option to require delivery during the period from the date of the coming into force of the present treaty until Jan. 1, 1920, and during each period of six months thereafter until Jan. 1, 1925, of any specified kind of dyestuff and chemical drug up to an amount not exceeding 25 per cent. of the German production of such dyestuffs and chemical drugs during the previous six months' period. If in any case the production during such previous six months was, in the opinion of the commission, less than normal, the amount required may be 25 per cent. of the normal production.

Such option shall be exercised within four weeks after the receipt of such particulars as to production and in such form as may be considered necessary by the commission; these particulars shall be furnished by the German Government immediately after the expiration of each six months' period.

3. For dyestuffs and chemical drugs delivered under Paragraph 1 the price shall be fixed by the commission, having regard to pre-war net export prices and to subsequent increases of cost.

For dyestuffs and chemical drugs delivered under Paragraph 2 the price shall be fixed by the commission, having regard to pre-war net export prices and subsequent variations of cost or the lowest net selling price of similar dyestuffs and chemical drugs to any other purchaser.

4. All details, including mode and times of exercising the options and making delivery, and all other questions arising under this arrangement shall be determined by the Reparation Commission; the German Government will furnish to the commission all necessary information and other assistance which it may require.

5. The above expression "dyestuffs and chemical drugs" includes all synthetic dyes and drugs and intermediate or other products used in connection with dyeing, so far as they are manufactured for sale. The present arrangement shall also apply to cinchona bark and salts of quinine.

ANNEX VII.

Germany renounces on her own behalf and on behalf of her nationals in favor of the principal Allied and Associated Powers all rights, titles or privileges of whatever nature in the submarine cables set out below, or in any portions thereof:

Emden-Vigo: from the Straits of Dover to off Vigo;
Emden-Brest: from off Cherbourg to Brest;
Emden-Teneriffe: from off Dunkirk to off Teneriffe;
Emden-Azores (1): from the Straits of Dover to Fayal;
Emden-Azores (2): from the Straits of Dover to Fayal;
Azores-New York (1): from Fayal to New York;
Azores-New York (2): from Fayal to the longitude of Halifax;
Teneriffe-Monrovia: from off Teneriffe to off Monrovia;
Monrovia-Lome: from about latitude 2 degrees 30 minutes north, and longitude 7 degrees 40 minutes west of Greenwich,
to about latitude 2 degrees 20 minutes north, and longitude 5 degrees 30 minutes west of Greenwich,
and from about latitude 3 degrees 48 minutes north, and longitude 0 degrees 0 minutes to Lome;
Lome-Duala: from Lome to Duala;
Monrovia-Pernambuco: from off Monrovia to off Pernambuco;
Constantinople-Constanza: from Constantipole to Constanza;
Yap-Shanghai, Yap-Guam, and Yap-Menado (Celebes): from Yap Island to Shanghai, from Yap Island to Guam Island, and from Yap Island to Manado.

The value of the above-mentioned cables or portions thereof in so far as they are privately owned, calculated on the basis of the original cost less a suitable allowance for depreciation, shall be credited to Germany in the reparation account.

SECTION II.— SPECIAL PROVISIONS.

Article 245.— Within six months after coming into force of the present treaty the German Government must restore to the French Government the trophies, archives, historical souvenirs, or works of art carried away from France by the German authorities in the course of the war of 1870–1871 and during this last war, in accordance with a list which will be communicated to it by the French Government; particularly the French flags taken in the course of the war of 1870–1871, and all the political papers taken by the German authorities on Oct. 10, 1870, at the Château of Cercay, near Brunoy, (Seine-et-Oise,) belonging at the time to M. Rouher, formerly Minister of State.

Article 246.— Within six months of the coming into force of the present treaty Germany will restore to his Majesty the King of the Hedjaz the original Koran of the Caliph Othman, which was removed from Medina by the Turkish authorities and is stated to have been presented to the ex-Emperor William II.

Within the same period Germany will hand over to his Britannic Majesty's Government the skull of the Sultan Mkwawa, which was removed from the protectorate of German East Africa and taken to Germany.

The delivery of the articles above referred to will be effected in such place and in such conditions as may be laid down by the Governments to which they are to be restored.

Article 247.— Germany undertakes to furnish to the University of Louvain, within three months after a request made by it and transmitted through the intervention of the Reparation Commission, manuscripts, incunabula, printed books, maps, and objects of collection corresponding in number and value to those destroyed in the burning by Germany of the library of Louvain. All details regarding such replacement will be determined by the Reparation Commission.

Germany undertakes to deliver to Belgium, through the Reparation Commission, within six months of the coming into force of the present treaty, in order to enable Belgium to reconstitute her two great artistic works:

(a) The leaves of the triptych of the Mystic Lamb painted by the Van Eyck Brothers, formerly in the Church of St. Bavon at Ghent, now in the Berlin Museum.

(b) The leaves of the triptych of the Last Supper, painted by Dierick Bouts, formerly in the Church of St. Peter at Louvain, two of which are now in the Berlin Museum and two in the old Pinakothek at Munich.

PART IX.— FINANCIAL CLAUSES.

Article 248.— Subject to such exceptions as the Reparation Commission may approve, a first charge upon all the assets and revenues of the German Empire and its constituent States shall be the cost of reparation and all other costs arising under the present treaty or any treaties or agreements supplementary thereto or under arrangements concluded between Germany and the Allied and Associated Powers during the armistice or its extensions.

Up to May 1, 1921, the German Government shall not export or dispose of, and shall forbid the export or disposal of, gold without the previous approval of the Allied and Associated Powers acting through the Reparation Commission.

Article 249.— There shall be paid by the German Government the total cost of all armies of the Allied and Associated Governments in occupied German territory from the date of the signature of the armistice of the 11th November, 1918, including the keep of men and beasts, lodging and billeting, pay and allowances, salaries and wages, bedding, heating, lighting, clothing, equipment, harness and saddlery, armament and rolling stock, air services, treatment of sick and wounded, veterinary and remount services, transport service of all sorts, (such as by rail, sea, river, or motor lorries,) communications and correspondence, and in general the cost of all administrative or technical services, the working of which is necessary for the training of troops and for keeping their numbers up to strength and preserving their military efficiency.

The cost of such liabilities under the above heads, so far as they relate to purchases or requisitions by the Allied and Associated Governments in the occupied territories, shall be paid by the German Government to the Allied and Associated Governments in marks at the current or agreed rate of exchange. All other of the above costs shall be paid in gold marks.

Article 250.— Germany confirms the surrender of all material handed over to the Allied and Associated Powers in accordance with the armistice agreement of the 11th November, 1918, and subsequent armistice agreements, and recognizes the title of the Allied and Associated Powers to such material.

There shall be credited to the German Government against the sums due from it to the Allied and Associated Powers for reparation, the value, as assessed by the Reparation Commission referred to in Article 233 of Part VIII (reparation) of the present treaty, of the material handed over in accordance with Article 7 of the armistice agreement of the 11th November, 1918, Article 3 of the armistice agreement of the 16th January, 1919, as well as of any other material handed over in accordance with the armistice agreement of the 11th November, 1918, and of subsequent armistice agreements, for which, as having non-military value, credit should, in the judgment of the Reparation Commission, be allowed to the German Government.

Property belonging to the Allied and Associated Governments or their nationals restored or surrendered under the armistice agreements in specie shall not be credited to the German Government.

Article 251.— The priority of the charges established by Article 248 shall, subject to the qualifications made below, be as follows:

(a) The cost of the armies of occupation as defined under Article 249 during the armistice and its extensions;

(b) The cost of any armies of occupation as defined under Article 249 after the coming into force of the present treaty;

(c) The cost of reparation arising out of the present treaty or any treaties or conventions supplementary thereto;

(d) The cost of all other obligations incumbent on Germany under the armistice conventions or under this treaty or any treaties or conventions supplementary thereto.

The payment for such supplies of food and raw material for Germany and such other payments as may be judged by the Allied and Associated Powers to be essential to enable Germany to meet her obligations in respect of reparation will have priority to the extent and upon the conditions which have been or may be determined by the Governments of the said powers.

Article 252.— The right of each of the Allied and Associated Powers to dispose of enemy assets and property within its jurisdiction at the date of the coming into force of the present treaty is not affected by the foregoing provisions.

Article 253.— Nothing in the foregoing provisions shall prejudice in any manner charges or mortgages lawfully effected in favor of the Allied and Associated Powers or their nationals respectively, before the date at which a state of war existed between Germany and the Allied and Associated Powers concerned, by the German Empire or its constituent States, or by German nationals on assets in their ownership at that date.

Article 254.— The powers to which German territory is ceded shall, subject to the qualifications made in Article 255, undertake to pay:

1. A portion of the debt of the German Empire as it stood on the 1st August, 1914, calculated on the basis of the ratio between the average for the three financial years 1911, 1912, 1913, of such revenues of the ceded territory and the average for the same years of such revenues of the whole German Empire as in the judgment of the Reparation Commission are best calculated to represent the relative ability of the respective territories to make payments.

2. A portion of the debt as it stood on the 1st August, 1914, of the German State to which the ceded territory belonged, to be determined in accordance with the principle stated above.

Such portions shall be determined by the Reparation Commission.

The method of discharging the obligation both in respect of capital and of interest, so assumed, shall be fixed by the Reparation Commission. Such method may take the form, inter alia, of the assumption by the power to which the territory is ceded of Germany's liability for the German debt held by her nationals. But in the event of the method adopted involving any payments to the German Government, such payments shall be transferred to the Reparation Commission on account of the sums due for reparation so long as any balance in respect of such sums remains unpaid.

Article 255.—(1) As an exception to the above provision and inasmuch as in 1871 Germany refused to undertake any portion of the burden of the French debt, France shall be, in respect of Alsace-Lorraine, exempt from any payment under Article 254.

2. In the case of Poland that portion of the debt which, in the opinion of the Reparation Commission is attributable to the measures taken by the German and Prussian Governments for the German colonization of Poland shall be excluded from the apportionment to be made under Article 254.

3. In the case of all ceded territories other than Alsace-Lorraine that portion of the debt of the German Empire or German States which in the opinion of the Reparation Commission represents expenditure by the Governments of the German Empire or States upon the Government properties referred to in Article 256 shall be excluded from the apportionment to be made under Article 254.

Article 256.— Powers to which German territory is ceded shall acquire all property and possessions situated therein belonging to the German Empire or to the German States, and the value of such acquisitions shall be fixed by the Reparation Commission, and paid by the State acquiring the territory to the Reparation Commission for the credit of the German Government on account of the sums due for reparation.

For the purposes of this article the property and possessions of the German Empire and States shall be deemed to include all the property of the Crown, the Empire or the States, and the private property of the former German Emperor and other royal personages.

In view of the terms on which Alsace-Lorraine was ceded to Germany in 1871 France shall be exempt in respect thereof from making any payment or credit under this article for any property or possessions of the German Empire or States situated therein. Belgium also shall be exempt from making any payment or any credit under this article for any property or possessions of the German Empire or States situated in German territory ceded to Belgium under the present treaty.

Article 257.— In the case of the former German territories, including colonies, protectorates, or dependencies, administered by a mandatory under Article 22 of Part I (League of Nations) of the present treaty, neither the territory nor the mandatory power shall be charged with any portion of the debt of the German Empire or States.

All property and possessions belonging to the German Empire or to the German States situated in such territory shall be transferred with the territories to the Mandatory Power in its capacity as such, and no payment shall be made nor any credit given to those Governments in consideration of this transfer.

For the purpose of this article the property and possessions of the German Empire and of the German States shall be deemed to include all the property of the crown, the empire or the States and the private property of the former German Emperor and other royal personages.

Article 258.— Germany renounces all rights ac-

corded to her or her nationals by treaties, conventions or agreements, of whatsoever kind, to representation upon or participation in the control or administration of commissions, state banks, agencies or other financial or economic organizations of an international character, exercising powers of control or administration, and operating in any of the Allied or Associated States, or in Austria, Hungary, Bulgaria or Turkey, or in the dependencies of these States, or in the former Russian Empire.

Article 259.— 1. Germany agrees to deliver within one month from the date of the coming into force of the present treaty, to such authority as the principal Allied and Associated Powers may designate, the sum in gold which was to be deposited in the Reichsbank in the name of the Council of the Administration of the Ottoman Public Debt as security for the first issue of Turkish Government currency notes.

2. Germany recognizes her obligation to make annually for the period of twelve years the payments in gold for which provision is made in the German Treasury bonds deposited by her from time to time in the name of the Council of the Administration of the Ottoman Public Debt as security for the second and subsequent issue of Turkish Government currency notes.

3. Germany undertakes to deliver, within one month from the coming into force of the present treaty, to such authority as the principal Allied and Associated Powers may designate, the deposit gold constituted in the Reichsbank or elsewhere, representing the residue of the advance in gold agreed to on the 5th of May, 1915, by the Council of the Administration of the Ottoman Public Debt to the Imperial Ottoman Government.

4. Germany agrees to transfer to the principal Allied and Associated Powers any title that she may have to the sum in gold and silver transmitted by her to the Turkish Ministry of Finance in November, 1918, in anticipation of the payment to be made in May, 1919, for the service of the Turkish internal loan.

5. Germany undertakes to transfer to the principal Allied and Associated Powers within a period of one month from the coming into force of the present treaty, any sums in gold transferred as pledge or as collateral security to the German Government or its nationals in connection with loans made by them to the Austro-Hungarian Government.

6. Without prejudice to Article 292 of Part X (economic clauses) of the present treaty, Germany confirms the renunciation provided for in Article XV of the armistice convention of the 11th November, 1918, of any benefit disclosed by the treaties of Bucharest and of Brest-Litovsk, and by the treaties supplementary thereto.

Germany undertakes to transfer, either to Rumania or to the principal Allied and Associated Powers, as the case may be, all monetary instruments, specie, securities and negotiable instruments or goods which she has received under the aforesaid treaties.

7. The sums of money and all securities, instruments and goods of whatever nature, to be delivered, paid and transferred under the provisions of this article, shall be disposed of by the principal Allied and Associated Powers in a manner hereafter to be determined by these powers.

Article 260.— Without prejudice to the renunciation of any rights by Germany on behalf of herself or of her nationals in the other provisions of the present treaty, the Reparation Commission may, within one year from the coming into force of the present treaty, demand that the German Government become possessed of any rights and interests of the German nationals in any public utility undertaking or in any concession operating in Russia, China, Turkey, Austria, Hungary, and Bulgaria, or in the possessions or dependencies of these States or in any territory formerly belonging to Germany or her allies, to be ceded by Germany or her allies to any power, or to be administered by a mandatary under the present treaty, and may require that the German Government transfer, within six months of the date of demand, all such rights and interests and any similar rights and interests the German Government may itself possess, to the Reparation Commission.

Germany shall be responsible for indemnifying her nationals so dispossessed and the Reparation Commission shall credit Germany on account of sums due for reparation with such sums in respect of the value of the transferred rights and interests as may be assessed by the Reparation Commission, and the German Government shall, within six months from the coming into force of the present treaty, communicate to the Reparation Commission all such rights and interests, whether already granted, contingent, or not yet exercised, and shall renounce on behalf of itself and its nationals in favor of the Allied and Associated Powers all such rights and interests which have not been so communicated.

Article 261.— Germany undertakes to transfer to the Allied and Associated Powers any claims she may have to payment or repayment by the Governments of Austria, Hungary, Bulgaria, Turkey, and, in particular any claims which may arise, now or hereafter, from the fulfillment of undertakings made by Germany during the war to those Governments.

Article 262.— Any monetary obligation due by Germany arising out of the present treaty and expressed in terms of gold marks shall be payable at the option of the creditors in pounds sterling payable in London; gold dollars of the United States of America payable in New York; gold francs payable in Paris, or gold lire payable in Rome.

For the purpose of this article, the gold coins mentioned above shall be defined as being of the weight and fineness of gold as enacted by law on the 1st January, 1914.

Article 263.— Germany gives a guarantee to the Brazilian Government that all sums representing the sale of coffee belonging to the State of Sao Paolo in the Ports of Hamburg, Bremen, Antwerp, and Trieste, which were deposited with the Bank of Bleichröder at Berlin, shall be reimbursed, together with interest at the rate or rates agreed upon.

Germany, having prevented the transfer of the sums in question to the State of Sao Paolo at the proper time, guarantees also that the reimbursements shall be effected at the rate of exchange of the day of the deposit.

PART X.— ECONOMIC CLAUSES.

SECTION I.— COMMERCIAL RELATIONS.

Chapter I.— Customs Regulations, Duties, and Restrictions.

Article 264.— Germany undertakes that goods, the produce or manufacture of any one of the Allied or Asssociated States imported into German territory, from whatsoever place arriving, shall not be subjected to other or higher duties or charges (including internal charges) than those to which the like goods, the produce or manufacture of any other such State or of any other foreign country are subject.

Germany will not maintain or impose any prohibition or restriction on the importation into German territory of any goods the produce or manufacture of the territories of any one of the Allied or Associated States, from whatsoever place arriving, which shall not equally extend to the importation of the like goods the produce or manufacture of any other such State or of any other foreign country.

Article 265.— Germany further undertakes that, in the matter of the régime applicable on importation, no discrimination against the commerce of any of the Allied and Associated States as compared with any other of the said States or any other foreign country shall be made, even by indirect means, such as customs regulations or procedure, methods of verification or analysis, conditions of payment of duties, tariff classification or interpretation, or the operation of monopolies.

Article 266.— In all that concerns exportation Germany undertakes that goods, natural products or manufactured articles, exported from German territory to the territories of any one of the Allied or Associated States shall not be subjected to other or higher duties or charges (including internal charges) than those paid on the like goods exported to any other such State or to any other foreign country.

Germany will not maintain or impose any prohibition or restriction on the exportation of any goods sent from her territory to any one of the Allied or Associated States which shall not equally extend to the exportation of the like goods, natural products or manufactured articles, sent to any other such State or to any other foreign country.

Article 267.— Every favor, immunity, or privilege in regard to the importation, exportation, or transit of goods granted by Germany to any Allied or Associated State or to any other foreign country whatever shall simultaneously and unconditionally, without request and without compensation, be extended to all the Allied and Associated States.

Article 268.— The provisions of Articles 264 to 267 inclusive of this chapter and of Article 323 of Part XII (ports, waterways, and railways) of the present treaty are subject to the following exceptions:

(a) For a period of five years from the coming into force of the present treaty, natural or manufactured products which both originate in and come from the territories of Alsace and Lorraine reunited to France

shall, on importation into German customs territory, be exempt from all customs duty.

The French Government shall fix each year, by decree communicated to the German Government, the nature and amount of the products which shall enjoy this exemption.

The amount of each product which may be thus sent annually into Germany shall not exceed the average of the amounts sent annually in the years 1911–1913.

Further, during the period above mentioned the German Government shall allow the free export from Germany, and the free reimportation into Germany, exempt from all customs duties and other charges, (including internal charges,) of yarns, tissues, and other textile materials or textile products of any kind and in any condition, sent from Germany into the territories of Alsace or Lorraine, to be subjected there to any finishing process, such as bleaching, dyeing, printing, mercerization, gassing, twisting, or dressing.

(b) During a period of three years from the coming into force of the present treaty natural or manufactured products which both originate in and come from Polish territories which before the war were part of Germany shall, on importation into German customs territory, be exempt from all customs duty.

The Polish Government shall fix each year, by decree communicated to the German Government, the nature and amount of the products which shall enjoy this exemption.

The amount of each product which may be thus sent annually into Germany shall not exceed the average of the amounts sent annually in the years 1911–1913.

(c) The Allied and Associated Powers reserve the right to require Germany to accord freedom from customs duty, on importation into German customs territory, to natural products and manufactured articles which both originate in and come from the Grand Duchy of Luxemburg, for a period of five years from the coming into force of the present treaty.

The nature and amount of the products which shall enjoy the benefits of this régime shall be communicated each year to the German Government.

The amount of each product which may be thus sent annually into Germany shall not exceed the average of the amounts sent annually in the years 1911–1913.

Article 269.— During the first six months after the coming into force of the present treaty, the duties imposed by Germany on imports from Allied and Associated States shall not be higher than the most favorable duties which were applied to imports into Germany on the 31st July, 1914.

During a further period of thirty months after the expiration of the first six months, this provision shall continue to be applied exclusively with regard to products which, being comprised in Section A of the First Category of the German Customs Tariff of the 25th December, 1902, enjoyed at the above-mentioned date (31st July, 1914) rates conventionalized by treaties with the Allied and Associated Powers, with the addition of all kinds of wine and vegetable oils, of artificial silk and of washed or scoured wool, whether or not they were the subject of special conventions before the 31st July, 1914.

Article 270.— The Allied and Associated Powers reserve the right to apply to German territory occupied by their troops a special customs régime as regards imports and exports, in the event of such a measure being necessary in their opinion in order to safeguard the economic interests of the population of these territories.

Chapter II.— Shipping.

Article 271.—As regards sea fishing, maritime coasting trade, and maritime towage, vessels of the Allied and Associated Powers shall enjoy, in German territorial waters, the treatment accorded to vessels of the most-favored nation.

Article 272.— Germany agrees that, notwithstanding any stipulation to the contrary contained in the conventions relating to the North Sea fisheries and liquor traffic, all rights of inspection and police shall, in the case of fishing boats of the Allied Powers, be exercised solely by ships belonging to those powers.

Article 273.— In the case of vessels of the Allied or Associated Powers, all classes of certificates or documents relating to the vessel, which were recognized as valid by Germany before the war, or which may hereafter be recognized as valid by the principal maritime States, shall be recognized by Germany as valid and as equivalent to the corresponding certificates issued to German vessels.

A similar recognition shall be accorded to the certificates and documents issued to their vessels by the Governments of new States, whether they have a seacoast or not, provided that such certificates and documents shall be issued in conformity with the general practice observed in the principal maritime States.

The high contracting parties agree to recognize the flag flown by the vessels of an Allied or Associated Power having no seacoast which are registered at some one specified place situated in its territory; such place shall serve as the port of registry of such vessels.

Chapter III.— Unfair Competition.

Article 274.— Germany undertakes to adopt all the necessary legislative and administrative measures to protect goods the produce or manufacture of any one of the Allied and Associated Powers from all forms of unfair competition in commercial transactions.

Germany undertakes to prohibit and repress by seizure and by other appropriate remedies the importation, exportation, manufacture, distribution, sale or offering for sale in its territory of all goods bearing upon themselves or their usual get-up or wrappings any marks, names, devices, or descriptions whatsoever which are calculated to convey directly or indirectly a false indication of the origin, type, nature, or special characteristics of such goods.

Article 275.— Germany undertakes on condition that reciprocity is accorded in these matters to respect any law, or any administrative or judicial decision given in conformity with such law, in force in any Allied or Associated State and duly communicated to her by the proper authorities, defining or regulating the right to any regional appellation in respect of wine or spirits produced in the State to which the region belongs or the conditions under which the use of any such appellation may be permitted; and the importation, exportation, manufacture, distribution, sale or offering for sale of products or articles bearing regional appellations inconsistent with such law or order shall be prohibited by the German Government and repressed by the measures prescribed in the preceding article.

Chapter IV.— Treatment of Nationals of Allied and Associated Powers.

Article 276.— Germany undertakes:

(a) not to subject the nationals of the Allied and Associated Powers to any prohibition in regard to the exercise of occupations, professions, trade, and industry, which shall not be equally applicable to all aliens without exception;

(b) not to subject the nationals of the Allied and Associated Powers in regard to the rights referred to in Paragraph (a) to any regulation or restriction which might contravene directly or indirectly the stipulations of the said paragraph, or which shall be other or more disadvantageous than those which are applicable to nationals of the most-favored nation;

(c) not to subject the nationals of the Allied and Associated Powers, their property, rights, or interests, including companies and associations in which they are interested, to any charge, tax, or impost, direct or indirect, other or higher than those which are or may be imposed on her own nationals or their property, rights, or interests;

(d) not to subject the nationals of any one of the Allied and Associated Powers to any restriction which was not applicable on July 1, 1914, to the nationals of such powers unless such restriction is likewise imposed on her own nationals.

Article 277.— The nationals of the Allied and Associated Powers shall enjoy in German territory a constant protection for their persons and for their property, rights, and interests, and shall have free access to the courts of law.

Article 278.— Germany undertakes to recognize any new nationality which has been or may be acquired by her nationals under the laws of the Allied and Associated Powers, and in accordance with the decisions of the competent authorities of these powers pursuant to naturalization laws or under treaty stipulations, and to regard such persons as having, in consequence of the acquisition of such new nationality, in all respects severed their allegiance to their country of origin.

Article 279.— The Allied and Associated Powers may appoint Consuls General, Consuls, Vice Consuls, and Consular Agents in German towns and ports. Germany undertakes to approve the designation of the Consuls General, Consuls, Vice Consuls, and Consular Agents, whose names shall be notified to her, and to admit them to the exercise of their functions in conformity with the usual rules and customs.

Chapter V.— General Articles.

Article 280.— The obligations imposed on Germany by Chapter I and by Articles 271 and 272 of Chapter

II above shall cease to have effect five years from the date of the coming into force of the present treaty, unless otherwise provided in the text, or unless the Council of the League of Nations shall, at least twelve months before the expiration of that period, decide that these obligations shall be maintained for a further period with or without amendment.

Article 276 of Chapter IV shall remain in operation, with or without amendment, after the period of five years for such further period, if any, not exceeding five years, as may be determined by a majority of the Council of the League of Nations.

Article 281.— If the German Government engages in international trade, it shall not in respect thereof have or be deemed to have any rights, privileges, or immunities of sovereignty.

SECTION II.— TREATIES.

Article 282.— From the coming into force of the present treaty and subject to the provisions thereof the multilateral treaties, conventions, and agreements of an economic or technical character enumerated below and in the subsequent articles shall alone be applied as between Germany and those of the Allied and Associated Powers party thereto:

1. Conventions of March 14, 1884; Dec. 1, 1886, and March 23, 1887, and final protocol of July 7, 1887, regarding the protection of submarine cables.

2. Convention of Oct. 11, 1909, regarding the international circulation of motor cars.

3. Agreement of May 15, 1886, regarding the sealing of railway trucks subject to customs inspection, and protocol of May 18, 1907.

4. Agreement of May 15, 1886, regarding the technical standardization of railways.

5. Convention of July 5, 1890, regarding the publication of customs tariffs and the organization of an international union for the publication of customs tariffs.

6. Convention of Dec. 31, 1913, regarding the unification of commercial statistics.

7. Convention of April 25, 1907, regarding the raising of the Turkish customs tariff.

8. Convention of March 14, 1857, for the redemption of toll dues on the sound and belts.

9. Convention of June 22, 1861, for the redemption of the stade toll on the Elbe.

10. Convention of July 16, 1863, for the redemption of toll dues on the Scheldt.

11. Convention of Oct. 29, 1888, regarding the establishment of a definite arrangement guaranteeing the free use of the Suez Canal.

12. Convention of Sept. 23, 1910, respecting the unification of certain regulations regarding collisions and salvage at sea.

13. Convention of Dec. 21, 1904, regarding the exemption of hospital ships from dues and charges in ports.

14. Convention of Feb. 4, 1898, regarding the tonnage measurement of vessels for inland navigation.

15. Convention of Sept. 26, 1906, for the suppression of nightwork for women.

16. Convention of Sept. 26, 1906, for the suppression of the use of white phosphorus in the manufacture of matches.

17. Conventions of May 18, 1904, and May 4, 1910, regarding the suppression of the white slave traffic.

18. Convention of May 4, 1910, regarding the suppression of obscene publications.

19. Sanitary conventions of January, 1892; April 15, 1893; April 3, 1894; April 19, 1897, and Dec. 3, 1903.

20. Convention of May 20, 1875, regarding the unification and improvement of the metric system.

21. Convention of Nov. 29, 1906, regarding the unification of pharmacopœial formulæ for potent drugs.

22. Convention of Nov. 16 and 19, 1885, regarding the establishment of a concert pitch.

23. Convention of June 7, 1905, regarding the creation of an International Agricultural Institute at Rome.

24. Conventions of Nov. 3, 1881, and April 15, 1889, regarding precautionary measures against phylloxera.

25. Convention of March 19, 1902, regarding the protection of birds useful to agriculture.

26. Convention of June 12, 1902, as to the protection of minors.

Article 283.— From the coming into force of the present treaty the high contracting parties shall apply the conventions and agreements hereinafter mentioned, in so far as concerns them, on condition that the special stipulations contained in this article are fulfilled by Germany.

Postal Conventions.

Conventions and agreements of the Universal Postal Union concluded at Vienna, July 4, 1891.

Conventions and agreements of the Postal Union signed at Washington, June 15, 1897.

Conventions and agreements of the Postal Union signed at Rome, May 26, 1906.

Telegraphic Conventions.

International Telegraphic Conventions signed at St. Petersburg July 10, (22) 1875.

Regulations and tariffs drawn up by the International Telegraphic Conference, Lisbon, June 11, 1908.

Germany undertakes not to refuse her assent to the conclusion by the new States of the special arrangements referred to in the conventions and agreements relating to the Universal Postal Union and to the International Telegraphic Union, to which the said new States have adhered or may adhere.

Article 284.— From the coming into force of the present treaty the high contracting parties shall apply, in so far as concerns them, the International Radio-Telegraphic Convention of July 5, 1912, on condition that Germany fulfills the provisional regulations which will be indicated to her by the Allied and Associated Powers.

If within five years after the coming into force of the present treaty a new convention regulating international radio-telegraphic communications should have been concluded to take the place of the convention of July 5, 1912, this new convention shall bind Germany even if Germany should refuse either to take part in drawing up the convention or to subscribe thereto.

This new convention will likewise replace the provisional regulations in force.

Article 285.— From the coming into force of the present treaty the high contracting parties shall apply in so far as concerns them and under the conditions stipulated in Article 272 the conventions hereinafter mentioned:

1. The conventions of May 6, 1882, and Feb. 1, 1889, regulating the fisheries in the North Sea outside territorial waters.

2. The conventions and protocols of Nov. 16, 1887, Feb. 14, 1893, and April 11, 1894, regarding the North Sea liquor traffic.

Article 286.— The International Convention of Paris of March 20, 1883, for the protection of industrial property, revised at Washington on June 2, 1911; the International Convention of Berne of Sept. 9, 1886, for the protection of literary and artistic works, revised at Berlin on Nov. 13, 1908, and completed by the additional protocol signed at Berne on March 20, 1914, will again come into effect as from the coming into force of the present treaty, in so far as they are not affected or modified by the exceptions and restrictions resulting therefrom.

Article 287.— From the coming into force of the present treaty the high contracting parties shall apply, in so far as concerns them, the Convention of The Hague of July 17, 1905, relating to civil procedure. This renewal, however, will not apply to France, Portugal, and Rumania.

Article 288.— The special rights and privileges granted to Germany by Article 3 of the convention of Dec. 2, 1899, relating to Samoa shall be considered to have terminated on Aug. 4, 1914.

Article 289.— Each of the Allied or Associated Powers, being guided by the general principles or special provisions of the present treaty, shall notify to Germany the bilateral treaties or conventions which such Allied or Associated Power wishes to revive with Germany.

The notification referred to in the present article shall be made either directly or through the intermediary of another power. Receipt thereof shall be acknowledged in writing by Germany. The date of the revival shall be that of the notification.

The Allied and Associated Powers undertake among themselves not to revive with Germany any conventions or treaties which are not in accordance with the terms of the present treaty.

The notification shall mention any provisions of the said conventions and treaties which, not being in accordance with the terms of the present treaty, shall not be considered as revived. In case of any difference of opinion, the League of Nations will be called on to decide.

A period of six months from the coming into force of the present treaty is allowed to the Allied and Associated Powers within which to make the notification.

Only those bilateral treaties and conventions which

have been the subject of such a notification shall be revived between the Allied and Associated Powers and Germany; all the others are and shall remain abrogated.

The above regulations apply to all bilateral treaties or conventions existing between all the Allied and Associated Powers, signatories to the present treaty and Germany, even if the said Allied and Associated Powers have not been in a state of war with Germany.

Article 290.— Germany recognizes that all the treaties, conventions, or agreements which she has concluded with Austria, Hungary, Bulgaria, or Turkey since Aug. 1, 1914, until the coming into force of the present treaty are and remain abrogated by the present treaty.

Article 291.— Germany undertakes to secure to the Allied and Associated Powers, and to the officials and nationals of the said powers, the enjoyment of all the rights and advantages of any kind which she may have granted to Austria, Hungary, Bulgaria, or Turkey, or to the officials and nationals of these States by treaties, conventions, or arrangements concluded before Aug. 1, 1914, so long as those treaties, conventions, or arrangements remain in force.

The Allied and Associated Powers reserve the right to accept or not the enjoyment of these rights and advantages.

Article 292.— Germany recognizes that all treaties, conventions, or arrangements which she concluded with Russia or with any State or Government of which the territory previously formed a part of Russia, or with Rumania before Aug. 1, 1914, or after that date until the coming into force of the present treaty, are and remain abrogated.

Article 293.— Should an Allied or Associated Power, Russia, or a State or Government of which the territory formerly constituted a part of Russia have been forced since Aug. 1, 1914, by reason of military occupation or by any other means or for any other cause, to grant or to allow to be granted by the act of any public authority, concessions, privileges, and favors of any kind to Germany or to a German national, such concessions, privileges, and favors are *ipso facto* annulled by the present treaty.

No claims or indemnities which may result from this annulment shall be charged against the Allied or Associated Powers or the powers, States, Governments, or public authorities which are released from their engagements by the present article.

Article 294.— From the coming into force of the present treaty Germany undertakes to give the Allied and Associated Powers and their nationals the benefit *ipso facto* of the rights and advantages of any kind which she has granted by treaties, conventions, or arrangements to non-belligerent States or their nationals since Aug. 1, 1914, until the coming into force of the present treaty so long as those treaties, conventions, or arrangements remain in force.

Article 295.— Those of the high contracting parties who have not yet signed, or who have signed but not yet ratified, the Opium Convention signed at The Hague on Jan. 23, 1912, agree to bring the said convention into force, and for this purpose to enact the necessary legislation without delay and in any case within a period of twelve months from the coming into force of the present treaty.

Furthermore, they agree that ratification of the present treaty should in the case of powers which have not yet ratified the Opium Convention be deemed in all respects equivalent to the ratification of that convention and to the signature of the special protocol which was opened at The Hague in accordance with the resolutions adopted by the Third Opium Conference in 1914 for bringing the said convention into force.

For this purpose the Government of the French Republic will communicate to the Government of the Netherlands a certified copy of the protocol of the deposit of ratifications of the present treaty, and will invite the Government of the Netherlands to accept and deposit the said certified copy as if it were a deposit of ratifications of the Opium Convention and a signature of the additional protocol of 1914.

SECTION III.— DEBTS.

Article 296.— There shall be settled through the intervention of clearing offices to be established by each of the high contracting parties within three months of the notification referred to in paragraph (e) hereafter the following classes of pecuniary obligations:

1. Debts payable before the war and due by a national of one of the contracting powers, residing within its territory, to a national of an opposing power, residing within its territory.

2. Debts which became payable during the war to nationals of one contracting power residing within its territory and arose out of transactions or contracts with the nationals of an opposing power, resident within its territory, of which the total or partial execution was suspended on account of the declaration of war.

3. Interest which has accrued due before and during the war to a national of one of the contracting powers in respect of securities issued by an opposing power, provided that the payment of such securities to the nationals of that power or to neutrals has not been suspended during the war.

4. Capital sums which have become payable before and during the war to nationals of one of the contracting powers in respect of securities issued by one of the opposite powers, provided that the payment of such capital sums to nationals of that power or to neutrals has not been suspended during the war.

The proceeds of liquidation of enemy property, rights, and interests mentioned in Section IV and in the annex thereto will be accounted for through the clearing offices, in the currency and at the rate of exchange hereinafter provided in Paragraph (d), and disposed of by them under the conditions provided by the said section and annex.

The settlements provided for in this article shall be effected according to the following principles and in accordance with the annex to this section:

(a) Each of the high contracting parties shall prohibit, as from the coming into force of the present treaty, both the payment and the acceptance of payment of such debts, and also all communications between the interested parties with regard to the settlement of the said debts otherwise than through the clearing offices.

(b) Each of the high contracting parties shall be respectively responsible for the payment of such debts due by its nationals, except in the cases where before the war the debtor was in a state of bankruptcy or failure, or had given formal indication of insolvency or where the debt was due by a company whose business has been liquidated under emergency legislation during the war. Nevertheless, debts due by the inhabitants of territory invaded or occupied by the enemy before the armistice will not be guaranteed by the States of which those territories form part.

(c) The sums due to the nationals of one of the high contracting parties by the nationals of an opposing State will be debited to the clearing office of the country of the debtor, and paid to the creditor by the clearing office of the country of the creditor.

(d) Debts shall be paid or credited in the currency of such one of the Allied and Associated Powers, their colonies or protectorates, or the British Dominions or India, as may be concerned. If the debts are payable in some other currency they shall be paid or credited in the currency of the country concerned, whether an Allied or Associated Power, colony, protectorate, British Dominion, or India, at the pre-war rate of exchange.

For the purpose of this provision the pre-war rate of exchange shall be defined as the average cable transfer rate prevailing in the Allied or Associated country concerned during the month immediately preceding the outbreak of war between the said country concerned and Germany.

If a contract provides for a fixed rate of exchange governing the conversion of the currency in which the debt is stated into the currency of the Allied or Associated country concerned, then the above provisions concerning the rate of exchange shall not apply.

In the case of new States the currency in which and the rate of exchange at which debts shall be paid or credited shall be determined by the Reparation Commission provided for in Part VIII, (Reparation).

(e) The provisions of this article and of the annex hereto shall not apply as between Germany on the one hand and any one of the Allied and Associated Powers, their colonies or protectorates, or any one of the British Dominions or India on the other hand, unless within a period of one month from the deposit of the ratifications of the present treaty by the power in question, or of the ratification on behalf of such Dominion or of India, notice to that effect is given to Germany by the Government of such Allied or Associated Power or of such Dominion or of India as the case may be.

(f) The Allied and Associated Powers who have adopted this article and the annex hereto may agree between themselves to apply them to their respective nationals established in their territory so far as regards matters between their nationals and German nationals. In this case the payments made by application of this provision will be subject to arrangements between the allied and associated clearing offices concerned.

ANNEX.

1. Each of the high contracting parties will, within three months from the notification provided for in Article 296, Paragraph (e), establish a clearing office for the collection and payment of enemy debts.

Local clearing offices may be established for any particular portion of the territories of the high contracting parties. Such local clearing offices may perform all the functions of a central clearing office in their respective districts, except that all transactions with the clearing office in the opposing State must be effected through the central clearing office.

2. In this annex the pecuniary obligations referred to in the first paragraph of Article 296 are described as "enemy debts," the persons from whom the same are due as "enemy debtors," the persons to whom they are due as "enemy creditors," the clearing office in the country of the creditor is called the "Creditor Clearing Office," and the clearing office in the country of the debtor is called the "Debtor Clearing Office."

3. The high contracting parties will subject contraventions of Paragraph (a) of Article 296 to the same penalties as are at present provided by their legislation for trading with the enemy. They will similarly prohibit within their territory all legal process relating to payment of enemy debts, except in accordance with the provisions of this annex.

4. The Government guarantee specified in Paragraph (b) of Article 296 shall take effect whenever for any reason, a debt shall not be recoverable, except in a case where at the date of the outbreak of war the debt was barred by the laws of prescription in force in the country of the debtor, or where the debtor was at that time in a state of bankruptcy or failure or had given formal indication of insolvency, or where the debt was due by a company whose business has been liquidated under emergency legislation during the war. In such case the procedure specified by this annex shall apply to payment of the dividends.

The terms "bankruptcy" and "failure" refer to the application of legislation providing for such juridical conditions. The expression "formal indication of insolvency" bears the same meaning as it has in English law.

5. Creditors shall give notice to the Creditor Clearing Office within six months of its establishment of debts due to them, and shall furnish the Clearing Office with any documents and information required of them.

The high contracting parties will take all suitable measures to trace and punish collusion between enemy creditors and debtors. The clearing offices will communicate to one another any evidence and information which might help the discovery and punishment of such collusion.

The high contracting parties will facilitate as much as possible postal and telegraphic communication at the expense of the parties concerned and through the intervention of the clearing offices between debtors and creditors desirous of coming to an agreement as to the amount of their debt.

The Creditor Clearing Office will notify the Debtor Clearing Office of all debts declared to it. The Debtor Clearing Office will, in due course, inform the Creditor Clearing Office which debts are admitted and which debts are contested. In the latter case the Debtor Clearing Office will give the grounds for the non-admission of debt.

6. When a debt has been admitted, in whole or in part, the Debtor Clearing Office will at once credit the Creditor Clearing Office with the amount admitted, and at the same time notify it of such credit.

7. The debt shall be deemed to be admitted in full and shall be credited forthwith to the Creditor Clearing Office unless within three months from the receipt of the notification or such longer time as may be agreed to by the Creditor Clearing Office notice has been given by the Debtor Clearing Office that it is not admitted.

8. When the whole or part of a debt is not admitted the two clearing offices will examine into the matter jointly, and will endeavor to bring the parties to an agreement.

9. The Creditor Clearing Office will pay to the individual creditor the sums credited to it out of the funds placed at its disposal by the Government of its country and in accordance with the conditions fixed by the said Government, retaining any sums considered necessary to cover risks, expenses, or commissions.

10. Any person having claimed payment of an enemy debt which is not admitted in whole or in part shall pay to the clearing office by way of fine interest at 5 per cent. on the part not admitted. Any person having unduly refused to admit the whole or part of a debt claimed from him shall pay by way of fine interest at 5 per cent. on the amount with regard to which his refusal shall be disallowed.

Such interest shall run from the date of expiration of the period provided for in Paragraph 7 until the date on which the claim shall have been disallowed or the debt paid.

Each clearing office shall in so far as it is concerned take steps to collect the fines above provided for, and will be responsible if such fines cannot be collected.

The fines will be credited to the other clearing office, which shall retain them as a contribution toward the cost of carrying out the present provisions.

11. The balance between the clearing offices shall be struck monthly, and the credit balance paid in cash by the debtor State within a week.

Nevertheless, any credit balances which may be due by one or more of the Allied and Associated Powers shall be retained until complete payment shall have been effected of the sums due to the Allied or Associated Powers or their nationals or account of the war.

12. To facilitate discussion between the clearing offices each of them shall have a representative at the place where the other is established.

13. Except for special reasons all discussions in regard to claims will, so far as possible, take place at the Debtor Clearing Office.

14. In conformity with Article 296, Paragraph (b), the high contracting parties are responsible for the payment of the enemy debts owing by their nationals.

The Debtor Clearing Office will therefore credit the Creditor Clearing Office with all debts admitted, even in case of inability to collect them from the individual debtor. The Governments concerned will, nevertheless, invest their respective clearing offices with all necessary powers for the recovery of debts which have been admitted.

As an exception the admitted debts owing by persons having suffered injury from acts of war shall only be credited to the Creditor Clearing Office when the compensation due to the person concerned in respect of such injury shall have been paid.

15. Each Government will defray the expenses of the clearing office set up in its territory, including the salaries of the staff.

16. Where the two clearing offices are unable to agree whether a debt claimed is due, or in case of a difference between an enemy debtor and an enemy creditor, or between the clearing offices, the dispute shall either be referred to arbitration if the parties so agree under conditions fixed by agreement between them, or referred to the mixed arbitral tribunal provided for in Section VI hereafter.

At the request of the Creditor Clearing Office the dispute may, however, be submitted to the jurisdiction of the courts of the place of domicile of the debtor.

17. Recovery of sums found by the mixed arbitral tribunal, the court, or the arbitration tribunal to be due shall be effected through the clearing offices as if these sums were debts admitted by the Debtor Clearing Office.

18. Each of the Governments concerned shall appoint an agent who will be responsible for the presentation to the mixed arbitral tribunal of the cases conducted on behalf of its clearing office. This agent will exercise a general control over the representatives or counsel employed by its nationals.

Decisions will be arrived at on documentary evidence, but it will be open to the tribunal to hear the parties in person, or, according to their preference, by their representatives approved by the two Governments, or by the agent referred to above, who shall be competent to intervene along with the party or to reopen and maintain a claim abandoned by the same.

19. The clearing offices concerned will lay before the mixed arbitral tribunal all the information and documents in their possession, so as to enable the tribunal to decide rapidly on the cases which are brought before it.

20. Where one of the parties concerned appeals against the joint decision of the two clearing offices he shall make a deposit against the cost, which deposits shall only be refunded when the first judgment is modified in favor of the appellant and in proportion to the success he may attain, his opponent in case of such a refund being required to pay an equivalent proportion of the cost and expenses. Security accepted by the tribunal may be substituted for a deposit.

A fee of 5 per cent. of the amount in dispute shall be charged in respect of all cases brought before the tribunal. This fee shall, unless the tribunal directs otherwise, be borne by the unsuccessful party. Such fee shall be added to the deposit referred to. It is also independent of the security.

The tribunal may award to one of the parties a sum in respect of the expenses of the proceedings.

Any sum payable under this paragraph shall be credited to the clearing office of the successful party as a separate item.

21. With a view to the rapid settlement of claims, due regard shall be paid in the appointment of all persons connected with the clearing offices or with the Mixed Arbitral Tribunal to their knowledge of the language of the other country concerned. Each of the clearing offices will be at liberty to correspond with the other, and to forward documents in its own language.

22. Subject to any special agreement to the contrary between the Governments concerned, debts shall carry interest in accordance with the following provisions:

Interest shall not be payable on sums of money due by way of dividend, interest, or other periodical payments which themselves represent interest on capital.

The rate of interest shall be 5 per cent. per annum except in cases where, by contract, law, or custom, the creditor is entitled to payment of interest at a different rate. In such cases the rate to which he is entitled shall prevail.

Interest shall run from the date of commencement of hostilities (or, if the sum of money to be recovered fell due during the war, from the date at which it fell due) until the sum is credited to the clearing office of the creditor.

Sums due by way of interest shall be treated as debts admitted by the clearing offices and shall be credited to the Creditor Clearing Office in the same way as such debts.

23. Where by decision of the clearing offices or the Mixed Arbitral Tribunal a claim is held not to fall within Article 296, the creditor shall be at liberty to prosecute the claim before the courts or to take such other proceedings as may be open to him.

The presentation of a claim to the clearing office suspends the operation of any period of prescription.

24. The high contracting parties agree to regard the decisions of the Mixed Arbitral Tribunal as final and conclusive, and to render them binding upon their nationals.

25. In any case where a Creditor Clearing Office declines to notify a claim to the Debtor Clearing Office, or to take any step provided for in this annex, intended to make effective in whole or in part a request of which it has received due notice, the enemy creditor shall be entitled to receive from the clearing office a certificate setting out the amount of the claim, and shall then be entitled to prosecute the claim before the courts or to take such other proceedings as may be open to him.

SECTION IV.— PROPERTY, RIGHTS, AND INTERESTS.

Article 297.— The question of private property, rights, and interests in an enemy country, shall be settled according to the principles laid down in this section and to the provisions of the annex hereto:

(a) The exceptional war measures and measures of transfer (defined in paragraph 3 of the annex hereto) taken by Germany with respect to the property, rights, and interests of nationals of Allied or Associated Powers, including companies and associations in which they are interested, when liquidation has not been completed, shall be immediately discontinued or stayed and the property, rights, and interests concerned restored to their owners, who shall enjoy full rights therein in accordance with the provisions of Article 298.

(b) Subject to any contrary stipulations which may be provided for in the present treaty, the Allied and Associated Powers reserve the right to retain and liquidate all property, rights, and interests belonging at the date of the coming into force of the present treaty to German nationals, or companies controlled by them, within their territories, colonies, possessions, and protectorates including territories ceded to them by the present treaty.

The liquidation shall be carried out in accordance with the laws of the Allied or Associated State concerned, and the German owner shall not be able to dispose of such property, rights, or interests nor to subject them to any charge without the consent of that State.

German nationals who acquire ipso facto the nationality of an Allied or Associated Power in accordance with the provisions of the present treaty will not be considered as German nationals within the meaning of this paragraph.

(c) The price or the amount of compensation in respect of the exercise of the right referred to in the preceding paragraph (b) will be fixed in accordance with the methods of sale or valuation adopted by the laws of the country in which the property has been retained or liquidated.

(d) As between the Allied and Associated Powers or their nationals on the one hand and Germany or her nationals on the other hand, all the exceptional war measures, or measures of transfer, or acts done or to be done in execution of such measures as defined in Paragrpahs 1 and 3 of the annex hereto shall be considered as final and binding upon all persons except as regards the reservations laid down in the present treaty.

(e) The nationals of Allied and Associated Powers shall be entitled to compensation in respect of damage or injury inflicted upon their property, rights, or interests, including any company or association in which they are interested, in German territory as it existed on Aug. 1, 1914, by the application either of the exceptional war measures or measures of transfer mentioned in Paragraphs 1 and 3 of the annex hereto. The claims made in this respect by such nationals shall be investigated, and the total of the compensation shall be determined by the Mixed Arbitral Tribunal provided for in Section VI or by an arbitrator appointed by that tribunal. This compensation shall be borne by Germany, and may be charged upon the property of German nationals, within the territory or under the control of the claimant's State. This property may be constituted as a pledge for enemy liabilities under the conditions fixed by Paragraph 4 of the annex hereto. The payment of this compensation may be made by the Allied or Associated State, and the amount will be debited to Germany.

(f) Whenever a national of an Allied or Associated Power is entitled to property which has been subjected to a measure of transfer in German territory and expresses a desire for its restitution, his claim for compensation in accordance with Paragraph (e) shall be satisfied by the restitution of the said property if it still exists in specie.

In such case Germany shall take all necessary steps to restore the evicted owner to the possession of his property, free from all incumbrances or burdens with which it may have been charged after the liquidation, and to indemnify all third parties injured by the restitution.

If the restitution provided for in this paragraph cannot be effected, private agreements arranged by the intermediation of the powers concerned or the clearing offices provided for in the Annex to Section III may be made, in order to secure that the national of the Allied or Associated Power may secure compensation for the injury referred to in Paragraph (e) by the grant of advantages or equivalents which he agrees to accept in place of the property, rights or interests of which he was deprived.

Through the restitution in accordance with this article, the price or the amount of compensation fixed by the application of Paragraph (e) will be reduced by the actual value of the property restored, account being taken of compensation in respect of loss of use or deterioration.

(g) The rights conferred by Paragraph (f) are reserved to owners who are nationals of Allied or Associated Powers within whose territory legislative measures prescribing the general liquidation of enemy property, rights or interests were not applied before the signature of the armistice.

(h) Except in cases where, by application of Paragraph (f), restitutions in specie have been made, the net proceeds of sales of enemy property, rights or interests wherever situated carried out either by virtue of war legislation, or by application of this article, and in general all cash assets of enemies, shall be dealt with as follows:

(1) As regards powers adopting Section III and the annex thereto, the said proceeds and cash assets shall be credited to the power of which the owner is a national, through the clearing office established thereunder; any credit balance in favor of Germany resulting therefrom shall be dealt with as provided in Article 243.

(2) As regards powers not adopting Section III and the annex thereto, the proceeds of the property, rights and interests, and the cash assets, of the nationals of Allied or Associated Powers held by Germany shall be paid immediately to the person entitled thereto or to his Government; the proceeds of the property, rights and interests, and the cash assets, of German nationals received by an Allied or Associated Power shall be subject to disposal by such power in accordance with its laws and regulations and may be applied in payment of the claims and debts defined by this article or Paragraph 4 of the annex hereto. Any property, rights and interests or proceeds thereof or cash assets not used as above provided may be retained by the said Allied or Associated Power and if retained

the cash value thereof shall be dealt with as provided in Article 243.

In the case of liquidations effected in new States, which are signatories of the present treaty as Allied and Associated Powers, or in States which are not entitled to share in the reparation payments to be made by Germany, the proceeds of liquidations effected by such States shall, subject to the rights of the Reparation Commission under the present treaty, particularly under Articles 235 and 260, be paid direct to the owner. If on the application of that owner, the Mixed Arbitral Tribunal, provided for by Section VI of this part or an arbitrator appointed by that tribunal, is satisfied that the conditions of the sale or measures taken by the Government of the State in question outside its general legislation were unfairly prejudicial to the price obtained, they shall have discretion to award to the owner equitable compensation to be paid by that State.

(i) Germany undertakes to compensate its nationals in respect of the sale or retention of their property, rights or interests in Allied or Associated States.

(j) The amount of all taxes and imposts upon capital levied or to be levied by Germany on the property, rights, and interests of the nationals of the Allied or Associated Powers from the 11th of November, 1918, until three months from the coming into force of the present treaty, or, in the case of property, rights or interests which have been subjected to exceptional measures of war, until restitution in accordance with the present treaty, shall be restored to the owners.

Article 298.— Germany undertakes, with regard to the property, rights and interests, including companies and associations in which they were interested, restored to nationals of Allied and Associated Powers in accordance with the provisions of Article 297, Paragraph (a) or (f):

(*a*) to restore and maintain, except as expressly provided in the present treaty, the property, rights, and interests of the nationals of Allied or Associated Powers in the legal position obtaining in respect of the property, rights, and interests of German nationals under the laws in force before the war.

(*b*) not to subject the property, rights, or interests of the nationals of the Allied or Associated Powers to any measures in derogation of property rights which are not applied equally to the property, rights, and interests of German nationals, and to pay adequate compensation in the event of the application of these measures.

ANNEX.

1. In accordance with the provisions of Article 297, Paragraph (d), the validity of vesting orders and of orders for the winding up of businesses or companies, and of any other orders, directions, decisions, or instructions of any court or any department of the Government of any of the high contracting parties made or given, or purporting to be made or given, in pursuance of war legislation with regard to enemy property, rights, and interests is confirmed. The interests of all persons shall be regarded as having been effectively dealt with by any order, direction, decision, or instruction dealing with property in which they may be interested, whether or not such interests are specifically mentioned in the order, direction, decision, or instruction. No question shall be raised as to the regularity of a transfer of any property, rights, or interests dealt with in pursuance of any such order, direction, decision, or instruction. Every action taken with regard to any property, business, or company, whether as regards its investigation, sequestration, compulsory administration, use, requisition, supervision, or winding up, the sale or management of property, rights, or interests, the collection or discharge of debts, the payment of costs, charges or expenses, or any other matter whatsoever, in pursuance of orders, directions, decisions, or instructions of any court or of any department of the Government of any of the high contracting parties, made or given, or purporting to be made or given, in pursuance of war legislation with regard to enemy property, rights, or interests, is confirmed. Provided that the provisions of this paragraph shall not be held to prejudice the titles to property heretofore acquired in good faith and for value and in accordance with the laws of the country in which the property is situated by nationals of the Allied and Associated Powers.

The provisions of this paragraph do not apply to such of the above-mentioned measures as have been taken by the German authorities in invaded or occupied territory, nor to such of the above mentioned measures as have been taken by Germany or the German authorities since Nov. 11, 1918, all of which shall be void.

2. No claim or action shall be made or brought against any Allied or Associated Power or against any person acting on behalf of or under the direction of any legal authority or department of the Government of such a power by Germany or by any German national wherever resident in respect of any act or omission with regard to his property, rights, or interests during the war or in preparation for the war. Similarly no claim or action shall be made or brought against any person in respect of any act or omission under or in accordance with the exceptional war measures, laws, or regulations of any Allied or Associated Power.

3. In Article 297 and this Annex the expression "exceptional war measures" includes measures of all kinds, legislative, administrative, judicial, or others, that have been taken or will be taken hereafter with regard to enemy property, and which have had or will have the effect of removing from the proprietors the power of disposition over their property, though without affecting the ownership, such as measures of supervision, of compulsory administration, and of sequestration; or measures which have had or will have as an object the seizure of, the use of, or the interference with enemy assets, for whatsoever motive, under whatsoever form or in whatsoever place. Acts in the execution of these measures include all detentions, instructions, orders or decrees of Government departments or courts applying these measures to enemy property, as well as acts performed by any person connected with the administration or the supervision of enemy property, such as the payment of debts, the collecting of credits, the payment of any costs, charges, or expenses, or the collecting of fees.

Measures of transfer are those which have affected or will affect the ownership of enemy property by transferring it in whole or in part to a person other than the enemy owner, and without his consent, such as measures directing the sale, liquidation, or devolution of ownership in enemy property, or the canceling of titles or securities.

4. All property, rights, and interests of German nationals within the territory of any Allied or Associated Power and the net proceeds of their sale, liquidation or other dealing therewith may be charged by that Allied or Associated Power in the first place with payment of amounts due in respect of claims by the nationals of that Allied or Associated Power with regard to their property, rights, and interests, including companies and associations in which they are interested in German territory, or debts owing to them by German nationals, and with payment of claims growing out of acts committed by the German Government or by any German authorities since July 31, 1914, and before that Allied or Associated Power entered into the war. The amount of such claims may be assessed by an arbitrator appointed by Gustave Ador, if he is willing, or if no such appointment is made by him by an arbitrator appointed by the Mixed Arbitral Tribunal provided for in Section VI. They may be charged in the second place with payment of the amounts due in respect of claims by the nationals of such Allied or Associated Power with regard to their property, rights, and interests in the territory of other enemy powers, or debts owing to them by nationals of such powers in so far as those claims or debts are otherwise unsatisfied.

5. Notwithstanding the provisions of Article 297, where immediately before the outbreak of war a company incorporated in an Allied or Associated State had rights in common with a company controlled by it and incorporated in Germany to the use of trademarks in third countries, or enjoyed the use in common with such company of unique means of reproduction of goods or articles for sale in third countries, the former company shall alone have the right to use these trademarks in third countries to the exclusion of the German company, and these unique means of reproduction shall be handed over to the former company, notwithstanding any action taken under German war legislation with regard to the latter company or its business, industrial property or shares. Nevertheless, the former company, if requested, shall deliver to the latter company derivative copies permitting the continuation of reproduction of articles for use within German territory.

6. Up to the time when restitution is carried out in accordance with Article 297, Germany is responsible for the conservation of property, rights, and interests of the nationals of Allied or Associated Powers, including companies and associations in which they are interested, that have been subjected by her to exceptional war measures.

7. Within one year from the coming into force of the present treaty the Allied or Associated Powers will specify the property, rights and interests over which they intend to exercise the right provided in Article 297, Paragraph (f).

8. The restitution provided in Article 297 will be carried out by order of the German Government or of the authorities which have been substituted for it. Detailed accounts of the action of administrators shall be

furnished to the interested persons by the German authorities upon request, which may be made at any time after the coming into force of the present treaty.

9. Until the completion of the liquidation provided for by Article 297, Paragraph (b), the property, rights and interests of German nationals will continue to be subject to exceptional war measures that have been or will be taken with regard to them.

10. Germany will, within six months from the coming into force of the present treaty, deliver to each Allied or Associated Power all securities, certificates, deeds, or other documents of title held by its nationals and relating to property, rights or interests situated in the territory of that Allied or Associated Power, including any shares, stock, debentures, debenture stocks, or other obligations of any company incorporated in accordance with the laws of that power.

Germany will at any time on demand of any Allied or Associated Power furnish such information as may be required with regard to the property, rights, and interests of German nationals within the territory of such Allied or Associated Power, or with regard to any transactions concerning such property, rights or interests effected since July 1, 1914.

11. The expression "cash assets" includes all deposits or funds established before or after the declaration of war, as well as all assets coming from deposits, revenues, or profits collected by administrators, sequestrators, or others from funds placed on deposit or otherwise, but does not include sums belonging to the Allied or Associated Powers or to their component States, provinces, or municipalities.

12. All investments wheresoever effected with the cash assets of nationals of the high contracting parties, including companies and associations in which such nationals were interested, by persons responsible for the administration of enemy properties or having control over such administration, or by order of such persons or of any authority whatsoever shall be annulled. These cash assets shall be accounted for irrespective of any such investment.

13. Within one month from the coming into force of the present treaty, or on demand at any time, Germany will deliver to the Allied and Associated Powers all accounts, vouchers, records, documents, and information of any kind which may be within German territory, and which concern the property, rights and interests of the nationals of those powers, including companies and associations in which they are interested, that have been subjected to an exceptional war measure, or to a measure of transfer either in German territory or in territory occupied by Germany or her allies.

The controllers, supervisors, managers, administrators, sequestrators, liquidators, and receivers shall be personally responsible under guarantee of the German Government for the immediate delivery in full of these accounts and documents, and for their accuracy.

14. The provisions of Article 297 and this annex relating to property, rights and interests in an enemy country, and the proceeds of the liquidation thereof, apply to debts, credits and accounts, Section III regulating only the method of payment.

In the settlement of matters provided for in Article 297 between Germany and the Allied or Associated States, their colonies or protectorates, or any one of the British Dominions or India, in respect of any of which a declaration shall not have been made that they adopt Section III, and between their respective nationals, the provisions of Section III respecting the currency in which payment is to be made and the rate of exchange and of interest shall apply unless the Government of the Allied or Associated Power concerned shall within six months of the coming into force of the present treaty notify Germany that the said provisions are not to be applied.

15. The provisions of Article 297 and this annex apply to industrial, literary, and artistic property which has been or will be dealt with in the liquidation of property, rights, interests, companies, or businesses under war legislation by the Allied or Associated Powers, or in accordance with the stipulations of Article 297, Paragraph (b).

SECTION V.— CONTRACTS, PRESCRIPTIONS, JUDGMENTS.

Article 299.—(a) Any contract concluded between enemies shall be regarded as having been dissolved as from the time when any two of the parties become enemies, except in respect of any debt or other pecuniary obligation arising out of any act done or money paid thereunder, and subject to the exceptions and special rules with regard to particular contracts or classes of contracts contained herein or in the annex hereto.

(b) Any contract of which the execution shall be required in the general interest, within six months from the date of the coming into force of the present treaty, by the Allied or Associated Governments of which one of the parties is a national, shall be excepted from dissolution under this article.

When the execution of the contract thus kept alive would, owing to the alteration of trade conditions, cause one of the parties substantial prejudice the mixed arbitral tribunal provided for by Section VI shall be empowered to grant to the prejudiced party equitable compensation.

(c) Having regard to the provisions of the Constitution and law of the United States of America, of Brazil, and of Japan, neither the present Article, nor Article 300, nor the Annex hereto shall apply to contracts made between nationals of these States and German nationals; nor shall Article 305 apply to the United States of America or its nationals.

(d) The present Article and the Annex hereto shall not apply to contracts the parties to which became enemies by reason of one of them being an inhabitant of territory of which the sovereignty has been transferred, if such party shall acquire under the present Treaty the nationality of an allied or associated power, nor shall they apply to contracts between nationals of the Allied and Associated Powers between whom trading has been prohibited by reason of one of the parties being in allied or associated territory in the occupation of the enemy.

(e) Nothing in the present Article or the Annex hereto shall be deemed to invalidate a transaction lawfully carried out in accordance with a contract between enemies if it has been carried out with the authority of one of the belligerent Powers.

Article 300.—(a) All periods of prescription, or limitation of right of action, whether they began to run before or after the outbreak of war, shall be treated in the territory of the High Contracting Parties, so far as regards relations between enemies, as having been suspended for the duration of the war. They shall begin to run again at earliest three months after the coming into force of the present Treaty. This provision shall apply to the period prescribed for the presentation of interest or dividend coupons or for the presentation for repayment of securities drawn for repayment or repayable on any other ground.

(b) Where, on account of failure to perform any act or comply with any formality during the war, measures of execution have been taken in German territory to the prejudice of a national of an Allied or Associated Power, the claim of such national shall, if the matter does not fall within the competence of the courts of an Allied or Associated Power, be heard by the mixed arbitral tribunal provided for by Section VI.

(c) Upon the application of any interested person who is a national of an Allied or Associated Power, the mixed arbitral tribunal shall order the restoration of the rights which have been prejudiced by the measures of execution referred to in paragraph (b), wherever, having regard to the particular circumstances of the case, such restoration is equitable and possible.

If such restoration is inequitable or impossible the mixed arbitral tribunal may grant compensation to the prejudiced party to be paid by the German Government.

(d) Where a contract between enemies has been dissolved by reason either of failure on the part of either party to carry out its provisions or of the exercise of a right stipulated in the contract itself the party prejudiced may apply to the Mixed Arbitral Tribunal for relief. The tribunal will have the powers provided for in paragraph (c).

(e) The provisions of the preceding paragraphs of this article shall apply to the nationals of Allied and Associated Powers who have been prejudiced by reason of measures referred to above taken by Germany in invaded or occupied territory, if they have not been otherwise compensated.

(f) Germany shall compensate any third party who may be prejudiced by any restitution or restoration ordered by the Mixed Arbitral Tribunal under the provisions of the preceding paragraphs of this Article.

(g) As regards negotiable instruments, the period of three months provided under paragraph (a) shall commence as from the date on which any exceptional regulations applied in the territories of the interested power with regard to negotiable instruments shall have definitely ceased to have force.

Article 301.— As between enemies no negotiable instrument made before the war shall be deemed to have become invalid by reason only of failure within the required time to present the instrument for acceptance or payment or to give notice of non-acceptance or non-payment to drawers or indorsers or to protest the instrument, nor by reason of failure to complete any formality during the war.

Where the period within which a negotiable instrument should have been presented for acceptance or for payment, or within which notice of non-acceptance or non-payment should have been given to the drawer or indorser, or within which the instrument should have been protested, has elapsed during the war, and the party who should have presented or protested the instrument or have given notice of non-acceptance or non-payment has failed to do so during the war, a period of not less than three months from the coming into force of the present treaty shall be allowed within which presentation, notice of non-acceptance or non-payment or protest may be made.

Article 302.— Judgments given by the courts of an Allied or Associated Power in all cases which, under the present treaty, they are competent to decide, shall be recognized in Germany as final, and shall be enforced without it being necessary to have them declared executory.

If a judgment in respect of any dispute which may have arisen has been given during the war by a German court against a national of an Allied or Associated State in a case in which he was not able to make his defense, the allied and associated national who has suffered prejudice thereby shall be entitled to recover compensation, to be fixed by the Mixed Arbitral Tribunal provided for in Section VI.

At the instance of the national of the Allied or Associated Power the compensation above mentioned may, upon order to that effect of the Mixed Arbitral Tribunal, be effected where it is possible by replacing the parties in the situation which they occupied before the judgment was given by the German court.

The above compensation may likewise be obtained before the Mixed Arbitral Tribunal by the nationals of Allied or Associated Powers who have suffered prejudice by judicial measures taken in invaded or occupied territories, if they have not been otherwise compensated.

Article 303.— For the purpose of Sections III, IV, V, and VII, the expression "during the war" means for each Allied or Associated Power the period between the commencement of the state of war between that power and Germany and the coming into force of the present treaty.

ANNEX.

I. General Provisions.

1. Within the meaning of Articles 299, 300 and 301, the parties to a contract shall be regarded as enemies when trading between them shall have been prohibited by or otherwise became unlawful under laws, orders or regulations to which one of those parties was subject. They shall be deemed to have become enemies from the date when such trading was prohibited or otherwise became unlawful.

2. The following classes of contracts are excepted from dissolution by Article 299 and, without prejudice to the rights contained in Article 297 (b) of Section IV, remain in force subject to the application of domestic laws, orders or regulations made during the war by the Allied and Associated Powers and subject to the terms of the contracts:

(a) Contracts having for their object the transfer of estates or of real or personal property where the property therein had passed or the object had been delivered before the parties became enemies;

(b) Leases and agreements for leases of land and houses;

(c) Contracts of mortgage, pledge, or lien;

(d) Concessions concerning mines, quarries or deposits;

(e) Contracts between individuals or companies and States, provinces, municipalities, or other similar juridical persons charged with administrative functions, and concessions granted by States, provinces, municipalities, or other similar juridical persons charged with administrative functions.

3. If the provisions of a contract are in part dissolved under Article 299, the remaining provisions of that contract shall, subject to the same application of domestic laws as is provided for in Paragraph 2, continue in force if they are severable, but where they are not severable the contract shall be deemed to have been dissolved in its entirety.

II. Provisions Relating to Certain Classes of Contracts.

Stock Exchange and Commercial Exchange Contracts.

4. (a) Rules made during the war by any recognized exchange or commercial association providing for the closure of contracts entered into before the war by an enemy are confirmed by the high contracting parties, as also any action taken thereunder, provided:

(i) That the contract was expressed to be made subject to the rules of the exchange or association in question;

(ii) That the rules applied to all persons concerned;

(iii) That the conditions attaching to the closure were fair and reasonable.

(b) The preceding paragraph shall not apply to rules made during the occupation by exchange or commercial associations in the districts occupied by the enemy.

(c) The closure of contracts relating to cotton "futures," which were closed as on the 31st July, 1914, under the decision of the Liverpool Cotton Association, is also confirmed.

Security.

(5) The sale of a security held for an unpaid debt owing by an enemy shall be deemed to have been valid irrespective of notice to the owner if the creditor acted in good faith and with reasonable care and prudence, and no claim by the debtor on the ground of such sale shall be admitted.

This stipulation shall not apply to any sale of securities effected by an enemy during the occupation in regions invaded or occupied by the enemy.

Negotiable Instruments.

6. As regards powers which adopt Section III and the Annex thereto the pecuniary obligations existing between enemies and resulting from the issue of negotiable instruments shall be adjusted in conformity with the said Annex by the instrumentality of the Clearing Offices, which shall assume the rights of the holder as regards the various remedies open to him.

7. If a person has either before or during the war become liable upon a negotiable instrument in accordance with an undertaking given to him by a person who has subsequently become an enemy, the latter shall remain liable to indemnify the former in respect of his liability, notwithstanding the outbreak of war.

III. Contracts of Insurance.

8. Contracts of insurance entered into by any person with another person who subsequently became an enemy will be dealt with in accordance with the following paragraphs:

Fire Insurance.

9. Contracts for the insurance of property against fire entered into by a person interested in such property with another person who subsequently became an enemy shall not be deemed to have been dissolved by the outbreak of war, or by the fact of the person becoming an enemy, or on account of the failure during the war and for a period of three months thereafter to perform his obligations under the contract, but they shall be dissolved at the date when the annual premium becomes payable for the first time after the expiration of a period of three months after the coming into force of the present treaty.

A settlement shall be effected of unpaid premiums which became due during the war, or of claims for losses which occurred during the war.

10. Where by administrative or legislative action an insurance against fire effected before the war has been transferred during the war from the original to another insurer, the transfer will be recognized and the liability of the original insurer will be deemed to have ceased as from the date of the transfer. The original insurer will, however, be entitled to receive on demand full information as to the terms of the transfer, and if it should appear that these terms were not equitable they shall be amended so far as may be necessary to render them equitable.

Furthermore, the insured shall, subject to the concurrence of the original insurer, be entitled to retransfer the contract to the original insurer as from the date of the demand.

Life Insurance.

11. Contracts of life insurance entered into between an insurer and a person who subsequently became an enemy shall not be deemed to have been dissolved by the outbreak of war, or by the fact of the person becoming an enemy.

Any sum which during the war became due upon a contract deemed not to have been dissolved under the preceding provision shall be recoverable after the war with the addition of interest at five per cent. per annum from the date of its becoming due up to the day of payment.

Where the contract has lapsed during the war owing to non-payment of premiums, or has become void from breach of the conditions of the contract, the assured or his representatives or the persons entitled shall have the right at any time within twelve months of the coming into force of the present treaty to claim from the insurer the surrender value of the policy at the date of its lapse or avoidance.

Where the contract has lapsed during the war owing to non-payment of premiums the payment ot which has been prevented by the enforcement of measures of war, the assured or his representative or the persons entitled shall have the right to restore the contract on payment of the premiums with interest at five per cent. per annum within three months from the coming into effect of the present treaty.

12. Any Allied or Associated Power may within three months of the coming into force of the present treaty cancel all the contracts of insurance running between a German insurance company and its nationals under conditions which shall protect its nationals from any prejudice.

To this end the German insurance company will hand over to the allied or associated Government concerned, the proportion of its assets attributable to the policies so canceled and will be relieved from all liability in respect of such policies. The assets to be handed over shall be determined by an actuary appointed by the Mixed Arbitral Tribunal.

13. Where contracts of life insurance have been entered into by a local branch of an insurance company established in a country which subsequently became an enemy country, the contract shall, in the absence of any stipulation to the contrary in the contract itself, be governed by the local law, but the insurer shall be entitled to demand from the insured or his representatives the refund of sums paid on claims made or enforced under measures taken during the war, if the making or enforcement of such claims was not in accordance with the terms of the contract itself or was not consistent with the laws or treaties existing at the time when it was entered into.

14. In any case where by the law applicable to the contract the insurer remains bound by the contract notwithstanding the non-payment of premiums until notice is given to the insured of the termination of the contract, he shall be entitled where the giving of such notice was prevented by the war to recover the unpaid premiums with interest at five per cent. per annum from the insured.

15. Insurance contracts shall be considered as contracts of life assurance for the purpose of Paragraphs 11 to 14 when they depend on the probabilities of human life combined with the rate of interest for the calculation of the reciprocal engagements between the two parties.

Marine Insurance.

16. Contracts of marine insurance including time policies and voyage policies entered into between an insurer and a person who subsequently became an enemy, shall be deemed to have been dissolved on his becoming an enemy, except in cases where the risk undertaken in the contract had attached before he became an enemy.

Where the risk had not attached, money paid by way of premium or otherwise shall be recoverable from the insurer.

Where the risk had attached effect shall be given to the contract notwithstanding the party becoming an enemy, and sums due under the contract either by way of premiums or in respect of losses shall be recoverable after the coming into force of the present treaty.

In the event of any agreement being come to for the payment of interest on sums due before the war to or by the nationals of States which have been at war and recovered after the war, such interest shall in the case of losses recoverable under contracts of marine insurance run from the expiration of a period of one year from the date of the loss.

17. No contract of marine insurance with an insured person who subsequently became an enemy shall be deemed to cover losses due to belligerent action by the power of which the insurer was a national or by the allies or associates of such power.

18. Where it is shown that a person who had before the war entered into a contract of marine insurance with an insurer who subsequently became an enemy entered after the outbreak of war into a new contract covering the same risk with an insurer who was not an enemy, the new contract shall be deemed to be substituted for the original contract as from the date when it was entered into, and the premiums payable shall be adjusted on the basis of the original insurer having remained liable on the contract only up till the time when the new contract was entered into.

Other Insurance.

19. Contracts of insurance entered into before the war between an insurer and a person who subsequently became an enemy other than contracts dealt with in Paragraphs 9 to 18 shall be treated in all respects on the same footing as contracts of fire insurance between the same persons would be dealt with under the said paragraphs.

Re-insurance.

20. All treaties of re-insurance with a person who became an enemy shall be regarded as having been abrogated by the person becoming an enemy, but without prejudice in the case of life or marine risks which had attached before the war to the right to recover payment after the war for sums due in respect of such risks.

Nevertheless, if, owing to invasion, it has been impossible for the re-insured to find another re-insurer, the treaty shall remain in force until three months after the coming into force of the present treaty.

Where a re-insurance treaty becomes void under this paragraph, there shall be an adjustment of accounts between the parties in respect both of premiums paid and payable and of liabilities for losses in respect of life or marine risk which had attached before the war. In the case of risks other than those mentioned in Paragraphs 11 to 18 the adjustment of accounts shall be made as at the date of the parties becoming enemies without regard to claims for losses which may have occurred since that date.

21. The provisions of the preceding paragraph will extend equally to re-insurances existing at the date of the parties becoming enemies of particular risks undertaken by the insurer in a contract of insurance against any risks other than life or marine risks.

22. Re-insurance of life risks effected by particular contracts and not under any general treaty remain in force.

The provisions of paragraph 12 apply to treaties of re-insurance of life insurance contracts in which enemy companies are the re-insurers.

23. In case of a re-insurance effected before the war of a contract of marine insurance the cession of a risk which had been ceded to the re-insurer shall, if it had attached before the outbreak of war, remain valid and effect be given to the contract notwithstanding the outbreak of war; sums due under the contract of re-insurance in respect either of premiums or of losses shall be recoverable after the war.

24. The provisions of paragraphs 17 and 18 and the last part of paragraph 16 shall apply to contracts for the reinsurance of marine risks.

SECTION VI.— MIXED ARBITRAL TRIBUNAL.

Article 304.—(a) Within three months from the date of the coming into force of the present treaty, a Mixed Arbitral Tribunal shall be established between each of the Allied and Associated Powers on the one hand and Germany on the other hand. Each such tribunal shall consist of three members. Each of the Governments concerned shall appoint one of these members. The President shall be chosen by agreement between the two Governments concerned.

In case of failure to reach agreement, the President of the tribunal and two other persons either of whom may in case of need take his place, shall be chosen by the Council of the League of Nations, or, until this is set up, by M. Gustave Ador if he is willing. These persons shall be nationals of Powers that have remained neutral during the war.

If any Government does not proceed within a period of one month in case there is a vacancy to appoint a member of the tribunal, such member shall be chosen by the other Government from the two persons mentioned above other than the President.

The decision of the majority of the members of the tribunal shall be the decision of the tribunal.

(b) The Mixed Arbitral Tribunals established pursuant to paragraph (a) shall decide all questions within their competence under Sections III, IV, V, and VII.

In addition, all questions, whatsoever their nature, relating to contracts concluded before the coming into force of the present treaty between nationals of the Allied and Associated Powers and German nationals shall be decided by the Mixed Arbitral Tribunal, always excepting questions which, under the laws of the Allied, Associated or neutral powers, are within the jurisdiction of the national courts of those powers. Such questions shall be decided by the national courts in question, to the exclusion of the Mixed Arbitral Tribunal. The party who is a national of an Allied or Associated Power may nevertheless bring the case before the Mixed Arbitral Tribunal if this is not prohibited by the laws of his country.

(c) If the number of cases justifies it, additional members shall be appointed and each Mixed Arbitral Tribunal shall sit in divisions. Each of these divisions will be constituted as above.

(d) Each Mixed Arbitral Tribunal will settle its own procedure except in so far as it is provided in the following Annex, and is empowered to award the sums to be paid by the loser in respect of the costs and expenses of the proceedings.

(e) Each Government will pay the remuneration of the member of the Mixed Arbitral Tribunal appointed by it and of any agent whom it may appoint to represent it before the Tribunal. The remuneration of the President will be determined by special agreement between the Governments concerned, and this remuneration and the joint expenses of each tribunal will be paid by the two Governments in equal moieties.

(f) The high contracting parties agree that their courts and authorities shall render to the Mixed Arbitral Tribunal direct all the assistance in their power, particularly as regards transmitting notices and collecting evidence.

(g) The high contracting parties agree to regard the decisions of the Mixed Arbitral Tribunal as final and conclusive, and to render them binding upon their nationals.

ANNEX.

1. Should one of the members of the Tribunal either die, retire, or be unable for any reason whatever to discharge his functions, the same procedure will be followed for filling the vacancy as was followed for appointing him.

2. The tribunal may adopt such rules of procedure as shall be in accordance with justice and equity and decide the order and time at which each party must conclude its arguments, and may arrange all formalities required for dealing with the evidence.

3. The agent and counsel of the parties on each side are authorized to present orally and in writing to the tribunal arguments in support or in defense of each case.

4. The tribunal shall keep record of the questions and cases submitted and the proceedings thereon, with the dates of such proceedings.

5. Each of the Powers concerned may appoint a secretary. These secretaries shall act together as joint secretaries of the tribunal and shall be subject to its direction. The tribunal may appoint and employ any other necessary officer or officers to assist in the performance of its duties.

6. The tribunal shall decide all questions and matters submitted upon such evidence and information as may be furnished by the parties concerned.

7. Germany agrees to give the tribunal all facilities and information required by it for carrying out its investigations.

8. The language in which the proceedings shall be conducted shall, unless otherwise agreed, be English, French, Italian, or Japanese, as may be determined by the Allied or Associated Power concerned.

9. The place and time for the meetings of each tribunal shall be determined by the President of the tribunal.

Article 305.— Whenever a competent court has given or gives a decision in a case covered by Sections III, IV, V or VII, and such decision is inconsistent with the provisions of such sections, the party who is prejudiced by the decision shall be entitled to obtain redress which shall be fixed by the Mixed Arbitral Tribunal. At the request of the national of an Allied or Associated Power, the redress may, whenever possible, be effected by the Mixed Arbitral Tribunal directing the replacement of the parties in the position occupied by them before the judgment was given by the German Court.

SECTION VII.— INDUSTRIAL PROPERTY.

Article 306.— Subject to the stipulations of the present treaty, rights of industrial, literary, and artistic property, as such property is defined by the International Conventions of Paris and of Berne, mentioned in Article 286, shall be re-established or restored, as from the coming into force of the present treaty in the territories of the high contracting parties, in favor of the persons entitled to the benefit of them at the moment when the state of war commenced, or their legal representatives. Equally, rights which, except for the war, would have been acquired during the war in consequence of an application made for the protection of industrial property, or the publication of a literary or artistic work, shall be recognized and established in favor of those persons who would have been entitled thereto, from the coming into force of the present treaty.

Nevertheless, all acts done by virtue of the special measures taken during the war under legislative, executive or administrative authority of any Allied or Associated Power in regard to the rights of German nationals in industrial, literary or artistic property shall remain in force and shall continue to maintain their full effect.

No claim shall be made or action brought by Germany or German nationals in respect of the use during the war by the Government of any Allied or Associated Power, or by any persons acting on behalf or with the assent of such Government of any rights in industrial, literary or artistic property, nor in respect of the sale, offering for sale, or use of any products, articles, or apparatus whatsoever to which such rights applied.

Unless the legislation of any one of the Allied or Associated Powers in force at the moment of the signature of the present treaty otherwise directs, sums due or paid in virtue of any act or operation resulting from the execution of the special measures mentioned in Paragraph 1 of this article shall be dealt with in the same way as other sums due to German nationals are directed to be dealt with by the present treaty; and sums produced by any special measures taken by the German Government in respect of rights in industrial, literary or artistic property belonging to the nationals of the Allied or Associated Powers shall be considered and treated in the same way as other debts due from German nationals.

Each of the Allied and Associated Powers reserves to itself the right to impose such limitations, conditions or restrictions on rights of industrial, literary or artistic property (with the exception of trademarks) acquired before or during the war, or which may be subsequently acquired in accordance with its legislation, by German nationals, whether by granting licenses, or by the working, or by preserving control over their exploitation, or in any other way as may be considered necessary for national defense or in the public interest, or for assuring the fair treatment by Germany of the rights of industrial, literary, and artistic property held in German territory by its nationals, or for securing the due fulfillment of all the obligations undertaken by Germany in the present treaty.

As regards rights of industrial, literary and artistic property acquired after the coming into force of the present treaty, the right so reserved by the Allied and Associated Powers shall only be exercised in cases where these limitations, conditions or restrictions may be considered necessary for national defense or in the public interest.

In the event of the application of the provisions of the preceding paragraph by any of the Allied or Associated Powers, there shall be paid reasonable indemnities or royalties which shall be dealt with in the same way as other sums due to German nationals are directed to be dealt with by the present treaty.

Each of the Allied or Associated Powers reserves the right to treat as void and of no effect any transfer in whole or in part of or other dealing with rights of or in respect of industrial, literary or artistic property effected after Aug. 1, 1914, or in the future, which would have the result of defeating the objects of the provisions of this article.

The provisions of this article shall not apply to rights in industrial, literary or artistic property which have been dealt with in the liquidation of businesses or companies under war legislation by the Allied or Associated Powers, or which may be so dealt with by virtue of Article 297, paragraph (b).

Article 307.— A minimum of one year after the coming into force of the present treaty shall be accorded to the nationals of the high contracting parties, without extension fees or other penalty, in order to enable such persons to accomplish any act, fulfill any formality, pay any fees, and generally satisfy any obligation prescribed by the laws or regulations of the respective States relating to the obtaining, preserving, or opposing rights to, or in respect of, industrial property either acquired before the 1st of August, 1914, or which, except for the war, might have been acquired since that date as a result of an application made before the war or during its continuance, but nothing in this article shall give any right to reopen interference proceedings in the United States of America where a final hearing has taken place.

All rights in, or in respect of, such property which may have lapsed by reason of any failure to accomplish any act, fulfill any formality, or make any payment, shall revive, but subject in the case of patents and designs to the imposition of such conditions as each Allied or Associated Power may deem reasonably necessary for the protection of persons who have manufactured or made use of the subject matter of such property while the rights had lapsed. Further, where rights

to patents or designs belonging to German nationals are revived under this article, they shall be subject in respect of the grant of licenses to the same provisions as would have been applicable to them during the war, as well as to all the provisions of the present treaty.

The period from the 1st August, 1914, until the coming into force of the present treaty shall be excluded in considering the time within which a patent should be worked or a trademark or design used, and it is further agreed that no patent, registered trademark or design in force on the 1st of August, 1914, shall be subject to revocation or cancellation by reason only of the failure to work such patent or use such trademark or design for two years after the coming into force of the present treaty.

Article 308.— The rights of priority, provided by Article IV of the International Convention for the Protection of Industrial Property of Paris, of the 20th March, 1883, revised at Washington in 1911, or by any other convention or statute, for the filing or registration of applications for patents or models of utility, and for the registration of trademarks, designs, and models which had not expired on the 1st August, 1914, and those which have arisen during the war, or would have arisen but for the war, shall be extended by each of the high contracting parties in favor of all nationals of the other high contracting parties for a period of six months after the coming into force of the present treaty.

Nevertheless, such extension shall in no way affect the right of any of the high contracting parties or of any person who before the coming into force of the present treaty was *bona fide* in possession of any rights of industrial property conflicting with rights applied for by another who claims rights of priority in respect of them, to exercise such rights by itself or himself personally, or by such agents or licensees as derived their rights from it or him before the coming into force of the present treaty; and such persons shall not be amenable to any action or other process of law in respect of infringement.

Article 309.— No action shall be brought and no claim made by persons residing or carrying on business within the territories of Germany on the one part and of the Allied or Associated Powers on the other, or persons who are nationals of such powers, respectively, or by any one deriving title during the war from such persons, by reason of any action which has taken place within the territory of the other party between the date of the declaration of war and that of the coming into force of the present treaty, which might constitute an infringement of the rights of industrial property or rights of literary and artistic property, either existing at any time during the war or revived under the provisions of Articles 307 and 308.

Equally, no action for infringement of industrial, literary or artistic property rights by such persons shall at any time be permissible in respect of the sale or offering for sale for a period of one year after the signature of the present treaty in the territories of the Allied or Associated Powers on the one hand or Germany on the other, of products or articles manufactured, or of literary or artistic works published, during the period between the declaration of war and the signature of the present treaty, or against those who have acquired and continue to use them. It is understood, nevertheless, that this provision shall not apply when the possessor of the rights was domiciled or had an industrial or commercial establishment in the districts occupied by Germany during the war.

This article shall not apply as between the United States of America on the one hand and Germany on the other.

Article 310.— Licenses in respect of industrial, literary, or artistic property concluded before the war between nationals of the Allied or Associated Powers or persons residing in their territory or carrying on business therein, on the one part, and German nationals, on the other part, shall be considered as canceled as from the date of the declaration of war between Germany and the Allied or Associated Powers. But, in any case, the former beneficiary of a contract of this kind shall have the right, within a period of six months after the coming into force of the present treaty, to demand from the proprietor of the rights the grant of a new license, the conditions of which, in default of agreement between the parties, shall be fixed by the duly qualified tribunal in the country under whose legislation the rights had been acquired, except in the case of licenses held in respect of rights acquired under German law. In such cases the conditions shall be fixed by the Mixed Arbitral Tribunal referred to in Section VI of this Part. The tribunal may, if necessary, fix also the amount which it may deem just should be paid by reason of the use of the rights during the war.

No license in respect of industrial, literary, or artistic property, granted under the special war legislation of any Allied or Associated Power, shall be affected by the continued existence of any license entered into before the war, but shall remain valid and of full effect, and a license so granted to the former beneficiary of a license entered into before the war shall be considered as substituted for such license.

Where sums have been paid during the war by virtue of a license or agreement concluded before the war in respect of rights of industrial property or for the reproduction or the representation of literary, dramatic, or artistic works, these sums shall be dealt with in the same manner as other debts or credits of German nationals, as provided by the present treaty.

This Article shall not apply as between the United States of America on the one hand and Germany on the other.

Article 311.— The inhabitants of territories separated from Germany by virtue of the present treaty shall, notwithstanding this separation and the change of nationality consequent thereon, continue to enjoy in Germany all the rights in industrial, literary, and artistic property to which they were entitled under German legislation at the time of the separation.

Rights of industrial, literary and artistic property which are in force in the territories separated from Germany under the present treaty at the moment of the separation of these territories from Germany, or which will be re-established or restored in accordance with the provisions of Article 306 of the present treaty, shall be recognized by the State to which the said territory is transferred and shall remain in force in that territory for the same period of time given them under the German law.

SECTION VIII.— SOCIAL AND STATE INSURANCE IN CEDED TERRITORY.

Article 312.— Without prejudice to the provisions contained in other articles of the present treaty, the German Government undertakes to transfer to any power to which German territory in Europe is ceded, and to any power administering former German territory as a mandatary under Article 22 of Part I (League of Nations,) such portion of the reserves accumulated by the Government of the German Empire or of German States, or by public or private organizations under their control, as is attributable to the carrying on of social or State insurance in such territory.

The powers to which these funds are transferred must apply them to the performance of the obligations arising from such insurances.

The conditions of the transfer will be determined by special conventions to be concluded between the German Government and the Governments concerned.

In case these special conventions are not concluded in accordance with the above paragraph within three months after the coming into force of the present treaty, the conditions of transfer shall in each case be referred to a commission of five members, one of whom shall be appointed by the German Government, one by the other interested Government, and three by the governing body of the International Labor Office from the nationals of other States. This commission shall by majority vote within three months after appointment adopt recommendations for submission to the Council of the League of Nations, and the decisions of the council shall forthwith be accepted as final by Germany and the other Government concerned.

PART XI.—AERIAL NAVIGATION.

Article 313.— The aircraft of the Allied and Associated Powers shall have full liberty of passage and landing over and in the territory and territorial waters of Germany, and shall enjoy the same privileges as German aircraft, particularly in case of distress by land or sea.

Article 314.— The aircraft of the Allied and Associated Powers shall, while in transit to any foreign country whatever, enjoy the right of flying over the territory and territorial waters of Germany without landing, subject always to any regulations which may be made by Germany, and which shall be applicable equally to the aircraft of Germany and those of the Allied and Associated Countries.

Article 315.— All aerodromes in Germany open to national public traffic shall be open for the aircraft of the Allied and Associated Powers, and in any such aerodrome such aircraft shall be treated on a footing of equality with German aircraft as regards charges of every description, including charges for landing and accommodation.

Article 316.— Subject to the present provisions, the

rights of passage, transit and landing, provided for in Articles 313, 314 and 315, are subject to the observance of such regulations as Germany may consider it necessary to enact, but such regulations shall be applied without distinction to German aircraft and to those of Allied and Associated Countries.

Article 317.— Certificates of nationality, airworthiness, or competency, and licenses, issued or recognized as valid by any of the Allied or Associated Powers, shall be recognized in Germany as valid and as equivalent to the certificates and licenses issued by Germany.

Article 318.— As regards internal commercial air traffic, the aircraft of the Allied and Associated Powers shall enjoy in Germany most favored nation treatment.

Article 319.— Germany undertakes to enforce the necessary measures to insure that all German aircraft flying over her territory shall comply with the rules as to lights and signals, rules of the air and rules for air traffic on and in the neighborhood of areodromes, which have been laid down in the convention relative to aerial navigation concluded between the Allied and Associated Powers.

Article 320.— The obligations imposed by the preceding provisions shall remain in force until the 1st January, 1923, unless before that date Germany shall have been admitted into the League of Nations or shall have been authorized, by consent of the Allied and Associated Powers, to adhere to the convention relative to aerial navigation concluded between those powers.

PART XII.— PORTS, WATERWAYS AND RAILWAYS.

SECTION I.— GENERAL PROVISIONS.

Article 321.— Germany undertakes to grant freedom of transit through her territories on the routes most convenient for international transit, either by rail, navigable waterway, or canal, to persons, goods, vessels, carriages, wagons, and mails coming from or going to the territories of any of the Allied and Associated Powers, (whether continguous or not;) for this purpose the crossing of territorial waters shall be allowed. Such persons, goods, vessels, carriages, wagons, and mails shall not be subjected to any transit duty or to any undue delays or restrictions, and shall be entitled in Germany to national treatment as regards charges, facilities, and all other matters.

Goods in transit shall be exempt from all customs or other similar duties.

All charges imposed on transport in transit shall be reasonable, having regard to the conditions of the traffic. No charge, facility, or restriction shall depend directly or indirectly on the ownership or on the nationality of the ship or other means of transport on which any part of the through journey has been, or is to be, accomplished.

Article 322.— Germany undertakes neither to impose nor to maintain any control over transmigration traffic through her territories beyond measures necessary to insure that passengers are *bona fide* in transit; nor to allow any shipping company or any other private body, corporation, or person interested in the traffic to take any part whatever in, or to exercise any direct or indirect influence over, any administrative service that may be necessary for this purpose.

Article 323.— Germany undertakes to make no discrimination or preference, direct or indirect, in the duties, charges, and prohibitions relating to importations into or exportations from her territories, or, subject to the special engagements contained in the present treaty, in the charges and conditions of transport of goods or persons entering or leaving her territories, based on the frontier crossed; or on the kind, ownership, or flag of the means of transport (including aircraft) employed; or on the original or immediate place of departure of the vessel, wagon, or aircraft or other means of transport employed, or its ultimate or intermediate destination; or on the route of or places of transshipment on the journey; or on whether any port through which the goods are imported or exported is a German port or a port belonging to any foreign country or on whether the goods are imported or exported by sea, by land, or by air.

Germany particularly undertakes not to establish against the ports and vessels of any of the Allied and Associated Powers any surtax or any direct or indirect bounty for export or import by German ports of vessels, or by those of another power, for example by means of combined tariffs. She further undertakes that persons or goods passing through a port or using a vessel of any of the Allied and Associated Powers shall not be subjected to any formality or delay whatever to which such persons or goods would not be subjected if they passed through a German port or a port of any other power, or used a German vessel or a vessel of any other power.

Article 324.— All necessary administrative and technical measures shall be taken to shorten, as much as possible, the transmission of goods across the German frontiers and to insure their forwarding and transport from such frontiers, irrespective of whether such goods are coming from or going to the territories of the Allied and Associated Powers or are in transit from or to those territories, under the same material conditions in such matters as rapidity of carriage and care en route as are enjoyed by other goods of the same kind carried on German territory under similar conditions of transport.

In particular, the transport of perishable goods shall be promptly and regularly carried out, and the customs formalities shall be effected in such a way as to allow the goods to be carried straight through by trains which make connection.

Article 325.— The seaports of the Allied and Associated Powers are entitled to all favors and to all reduced tariffs granted on German railways or navigable waterways for the benefit of German ports or of any port of another power.

Article 326.— Germany may not refuse to participate in the tariffs or combinations of tariffs intended to secure for ports of any of the Allied or Associated Powers advantages similar to those granted by Germany to her own ports or the ports of any other power.

SECTION II.— NAVIGATION.

Chapter I.—Freedom of Navigation.

Article 327.— The nationals of any of the Allied and Associated Powers as well as their vessels and property shall enjoy in all German ports and in the inland navigation routes of Germany, the same treatment in all respects as German nationals, vessels and property.

In particular the vessels of any one of the Allied or Associated Powers shall be entitled to transport goods of any description, and passengers, to or from any ports or places in German territory to which German vessels may have access, under conditions which shall not be more onerous than those applied in the case of national vessels; they shall be treated on a footing or equality with national vessels as regards port and harobr facilities and charges of every description, including facilities for stationing, loading and unloading, and duties and charges of tonnage, harbor, pilotage, lighthouse, quarantine, and all analagous duties and charges of whatsoever nature, levied in the name of or for the profit of the Government, public functionaries, private individuals, corporations or establishments of any kind.

In the event of Germany granting a preferential régime to any of the Allied or Associated Powers or to any other foreign power, this régime shall be extended immediately and unconditionally to all the Allied and Associated Powers.

There shall be no impediment to the movement of persons or vessels other than those arising from prescriptions concerning customs, police, sanitation, emigration and immigration and those relating to the import and export of prohibited goods. Such regulations must be reasonable and uniform and must not impede traffic unnecessarily.

Chapter II.—Free Zones in Ports.

Article 328.— The free zones existing in German ports on the 1st August, 1914, shall be maintained. These free zones and any other free zones which may be established in German territory by the present treaty, shall be subject to the régime provided for in the following articles.

Goods entering or leaving a free zone shall not be subjected to any import or export duty, other than those provided for in Article 330.

Vessels and goods entering a free zone may be subjected to the charges established to cover expenses of administration, upkeep and improvement of the port, as well as to the charges for the use of various installations, provided that these charges shall be reasonable having regard to the expenditure incurred, and shall be levied in the conditions of equality provided for in Article 327.

Goods shall not be subjected to any other charge except a statistical duty which shall not exceed 1 per mille ad valorem, and which shall be devoted exclusively to defraying the expenses of compiling statements of the traffic in the port.

Article 329.— The facilities granted for the erection of warehouses, for packing and for unpacking goods, shall be in accordance with trade requirements for the time being. All goods allowed to be consumed in

the free zone shall be exempt from duty, whether of excise or of any other description, apart from the statistical duty provided for in Article 328 above.

There shall be no discrimination in regard to any of the provisions of the present article between persons belonging to different nationalities or between goods of different origin or destination.

Article 330.—Import duties may be levied on goods leaving the free zone for consumption in the country on the territory of which the port is situated. Conversely, export duties may be levied on goods coming from such country and brought into the free zone. These import and export duties shall be levied on the same basis and at the same rates as similar duties levied at the other customs frontiers of the country concerned. On the other hand, Germany shall not levy, under any denomination, any import, export, or transit duty on goods carried by land or water across her territory to or from the free zone from or to any other State.

Germany shall draw up the necessary regulations to secure and guarantee such freedom of transit over such railways and waterways in her territory as normally give access to the free zone.

Chapter III.—Clauses Relating to the Elbe, the Oder, the Niemen (Russtrom-Memel-Niemen), and the Danube.

(1) General Clauses.

Article 331.— The following rivers are declared international:

The Elbe (Labe) from its confluence with the Vltava (Moldau) and the Vltava (Moldau) from Prague;
the Oder (Odra) from its confluence with the Oppa;
the Niemen (Russtrom-Memel-Niemen) from Grodno;
the Danube from Ulm;

and all navigable parts of these river systems which naturally provide more than one State with access to the sea, with or without transshipment from one vessel to another; together with lateral canals and channels constructed either to duplicate or to improve naturally navigable sections of the specified river system, or to connect two naturally navigable sections of the same river.

The same shall apply to the Rhine-Danube navigable waterway, should such a waterway be constructed under the conditions laid down in Article 353.

Article 332.— On the waterways declared to be international in the preceding article, the nationals, property and flags of all powers shall be treated on a footing of perfect equality, no distinction being made to the detriment of the nationals, property or flag of any power between them and the nationals, property or flag of the riparian State itself or of the most favored nation.

Nevertheless, German vessels shall not be entitled to carry passengers or goods by regular services between the ports of any Allied or Associated Power, without special authority from such power.

Article 333.— Where such charges are not precluded by any existing conventions, charges varying on different sections of a river may be levied on vessels using the navigable channels or their approaches, provided that they are intended solely to cover equitably the cost of maintaining in a navigable condition, or of improving, the river and its approaches, or to meet expenditure incurred in the interests of navigation. The schedule of such charges shall be calculated on the basis of such expenditure and shall be posted up in the ports. These charges shall be levied in such a manner as to render any detailed examination of cargoes unnecessary, except in cases of suspected fraud or contravention.

Article 334.— The transit of vessels, passengers, and goods on these waterways shall be effected in accordance with the general conditions prescribed for transit in Section I, above.

When the two banks of an international river are within the same State goods in transit may be placed under seal or in the custody of customs agents. When the river forms a frontier goods and passengers in transit shall be exempt from all customs formalities; the loading and unloading of goods, and the embarkation and disembarkation of passengers, shall only take place in the ports specified by the riparian State.

Article 335.— No dues of any kind other than those provided for in the present part shall be levied along the course or at the mouth of these rivers.

This provision shall not prevent the fixing by the riparian States of customs, local octroi, or consumption duties, or the creation of reasonable and uniform charges levied in the ports, in accordance with public tariffs, for the use of cranes, elevators, quays, warehouses, etc.

Article 336.— In default of any special organization for carrying out the works connected with the upkeep and improvement of the international portion of a navigable system, each riparian State shall be bound to take suitable measures to remove any obstacle or danger to navigation and to insure the maintenance of good conditions of navigation.

If a State neglects to comply with this obligation any riparian State, or any State represented on the International Commission, if there is one, may appeal to the tribunal instituted for this purpose by the League of Nations.

Article 337.— The same procedure shall be followed in the case of a riparian State undertaking any works of a nature to impede navigation in the international section. The tribunal mentioned in the preceding article shall be entitled to enforce the suspension or suppression of such works, making due allowance in its decisions for all rights in connection with irrigation, water power, fisheries, and other national interests, which with the consent of all the riparian States or of all the States represented on the International Commission, if there be one, shall be given priority over the requirements of navigation.

Appeal to the tribunal of the League of Nations does not require the suspension of the works.

Article 338.— The régime set out in Articles 332 to 337 above shall be superseded by one to be laid down in a General Convention drawn up by the Allied and Associated Powers, and approved by the League of Nations, relating to the waterways recognized in such Convention as having an international character. This Convention shall apply in particular to the whole or part of the above-mentioned river systems of the Elbe, (Labe,) the Oder, (Odra,) the Niemen, (Russtrom-Memel-Niemen,) and the Danube, and such other parts of these river systems as may be covered by a general definition.

Germany undertakes in accordance with the provisions of Article 379, to adhere to the said General Convention as well as to all projects prepared in accordance with Article 343 below for the revision of existing international agreements and regulations.

Article 339.— Germany shall cede to the Allied and Associated Powers concerned, within a maximum period of three months from the date on which notification shall be given her, a proportion of the tugs and vessels remaining registered in the ports of the river systems referred to in Article 331 after the deduction of those surrendered by way of restitution or reparation. Germany shall in the same way cede material of all kinds necessary to the Allied and Associated Powers concerned for the utilization of those river systems.

The number of the tugs and boats and the amount of the material so ceded, and their distribution, shall be determined by an arbitrator or arbitrators nominated by the United States of America, due regard being had to the legitimate needs of the parties concerned, and particularly to the shipping traffic during the five years preceding the war.

All craft so ceded shall be provided with their fittings and gear, shall be in a good state of repair and in condition to carry goods, and shall be selected from among those most recently built.

The cessions provided for in the present article shall entail a credit of which the total amount, settled in a lump sum by the arbitrator or arbitrators, shall not in any case exceed the value of the capital expended in the initial establishment of the material ceded, and shall be set off against the total sums due from Germany; in consequence, the indemnification of the proprietors shall be a matter for Germany to deal with.

(2) Special Clauses Relating to the Elbe, the Oder, and the Niemen (Russtrom-Memel-Niemen).

Article 340.— The Elbe (Labe) shall be placed under the administration of an International Commission which shall comprise:

4 representatives of the German States bordering on the river;
2 representatives of the Czechoslovak State;
1 representative of Great Britain;
1 representative of France;
1 representative of Italy;
1 representative of Belgium.

Whatever be the number of members present, each delegation shall have the right to record a number of votes equal to the number of representatives allotted to it.

If certain of these representatives cannot be appointed at the time of the coming into force of the present treaty, the decisions of the commission shall nevertheless be valid.

Article 341.— The Oder (Odra) shall be placed under the administration of an International Commission, which shall comprise:

1 representative of Poland;
3 representatives of Prussia;
1 representative of the Czechoslovak State;
1 representative of Great Britain;
1 representative of France;
1 representative of Denmark;
1 representative of Sweden.

If certain of these representatives cannot be appointed at the time of the coming into force of the present treaty, the decision of the commission shall nevertheless be valid.

Article 342.— On a request being made to the League of Nations by any riparian State, the Niemen (Russtrom-Memel-Niemen) shall be placed under the administration of an International Commission, which shall comprise one representative of each riparian State, and three representatives of other States specified by the League of Nations.

Article 343.— The International Commissions referred to in Articles 340 and 341 shall meet within three months of the date of the coming into force of the present treaty. The International Commission referred to in Article 342 shall meet within three months from the date of the request made by a riparian State. Each of these commissions shall proceed immediately to prepare a project for the revision of the existing international agreements and regulations, drawn up in conformity with the General Convention referred to in Article 338, should such convention have been already concluded. In the absence of such convention, the project for revision shall be in conformity with the principles of Articles 332 to 337, above.

Article 344.— The projects referred to in the preceding article shall, inter alia:

(a) Designate the headquarters of the International Commission, and prescribe the manner in which its President is to be nominated;

(b) Specify the extent of the commission's powers, particularly in regard to the execution of works of maintenance, control, and improvement on the river system, the financial régime, the fixing and collection of charges, and regulations for navigation;

(c) Define the sections of the river or its tributaries to which the international régime shall be applied.

Article 345.— The international agreements and regulations at present governing the navigation of the Elbe, (Labe,) the Oder, (Odra,) and the Niemen (Russtrom-Memel-Niemen) shall be provisionally maintained in force until the ratification of the above-mentioned projects. Nevertheless, in all cases where such agreements and regulations in force are in conflict with the provisions of Articles 332 to 337 above, or of the General Convention to be concluded, the latter provisions shall prevail.

(3) Special Clauses Relating to the Danube.

Article 346.— The European Commission of the Danube reassumes the powers it possessed before the war. Nevertheless, as a provisional measure, only representatives of Great Britain, France, Italy, and Rumania shall constitute this commission.

Article 347.— From the point where the competence of the European Commission ceases, the Danube system referred to in Article 331 shall be placed under the administration of an international commission composed as follows:

2 representatives of German riparian States;
1 representative of each other riparian State;
1 representative of each non-riparian State represented in the future on the European Commission of the Danube.

If certain of these representatives cannot be appointed at the time of the coming into force of the present treaty, the decisions of the commission shall nevertheless be valid.

Article 348.— The International Commission provided for in the preceding article shall meet as soon as possible after the coming into force of the present treaty, and shall undertake provisionally the administration of the river in conformity with the provisions of Articles 332 to 337, until such time as a definite statute regarding the Danube is concluded by the powers nominated by the Allied and Associated Powers.

Article 349.— Germany agrees to accept the régime which shall be laid down for the Danube by a conference of the powers nominated by the Allied and Associated Powers, which shall meet within one year after the coming into force of the present treaty, and at which German representatives may be present.

Article 350.— The mandate given by Article 57 of the Treaty of Berlin of the 13th July, 1878, to Austria-Hungary, and transferred by her to Hungary, to carry out works at the Iron Gates, is abrogated. The commission intrusted with the administration of this part of the river shall lay down provisions for the settlement of accounts subject to the financial provisions of the present treaty. Charges which may be necessary shall in no case be levied by Hungary.

Article 351.— Should the Czechoslovak State, the Serb-Croat-Slovene State, or Rumania, with the authorization of or under mandate from the International Commission, undertake maintenance, improvement, weir, or other works on a part of the river system which forms a frontier, these States shall enjoy on the opposite bank, and also on the part of the bed which is outside their territory, all necessary facilities for the survey, execution, and maintenance of such works.

Article 352.— Germany shall be obliged to make to the European Commission of the Danube all restitutions, reparations, and indemnities for damages inflicted on the commission during the war.

Article 353.— Should a deep-draught Rhine-Danube navigable waterway be constructed, Germany undertakes to apply thereto the régime prescribed in Articles 332 to 338.

Chapter IV.—Clauses Relating to the Rhine and the Moselle.

Article 354.— As from the coming into force of the present treaty, the Convention of Mannheim of 17th October, 1868, together with the Final Protocol thereof, shall continue to govern navigation on the Rhine, subject to the conditions hereinafter laid down.

In the event of any provisions of the said Convention being in conflict with those laid down by the General Convention referred to in Article 338, (which shall apply to the Rhine,) the provisions of the General Convention shall prevail.

Within a maximum period of six months from the coming into force of the present treaty, the Central Commission referred to in Article 355 shall meet to draw up a project of revision of the Convention of Mannheim. This project shall be drawn up in harmony with the provisions of the General Convention referred to above, should this have been concluded by that time, and shall be submitted to the powers represented on the Central Commission. Germany hereby agrees to adhere to the project so drawn up.

Further, the modifications set out in the following articles shall immediately be made in the Convention of Mannheim.

The Allied and Associated Powers reserve to themselves the right to arrive at an understanding in this connection with Holland, and Germany hereby agrees to accede if required to any such understanding.

Article 355.— The Central Commission provided for in the Convention of Mannheim shall consist of nineteen members, viz.:

Two representatives of the Netherlands;
Two representatives of Switzerland;
Four representatives of German riparian States;
Four representatives of France, which in addition shall appoint the President of the Commission;
Two representatives of Great Britain;
Two representatives of Italy;
Two representatives of Belgium.

The headquarters of the Central Commission shall be at Strasbourg.

Whatever be the number of members present, each delegation shall have the right to record a number of votes equal to the number of representatives allotted to it.

If certain of these representatives cannot be appointed at the time of the coming into force of the present treaty, the decisions of the Commission shall nevertheless be valid.

Article 356.— Vessels of all nations, and their cargoes shall have the same rights and privileges as those which are granted to vessels belonging to the Rhine navigation, and to their cargoes.

None of the provisions contained in Articles 15 to 20 and 26 of the above-mentioned Convention of Mannheim, in Article 4 of the Final Protocol thereof, or in later Conventions, shall impede the free navigation of vessels and crews of all nations on the Rhine and on waterways to which such Conventions apply, subject to compliance with the regulations concerning pilotage and other police measures drawn up by the Central Commission.

The provisions of Article 22 of the Convention of Mannheim and of Article 5 of the Final Protocol thereof shall be applied only to vessels registered on the Rhine. The Central Commission shall decide on the steps to be taken to insure that other vessels satisfy the con-

ditions of the general regulations applying to navigation on the Rhine.

Article 357.— Within a maximum period of three months from the date on which notification shall be given Germany shall cede to France tugs and vessels, from among those remaining registered in German Rhine ports after the deduction of those surrendered by way of restitution or reparation, or shares in German Rhine navigation companies.

When vessels and tugs are ceded, such vessels and tugs, together with their fittings and gear, shall be in good state of repair, shall be in condition to carry on commercial traffic on the Rhine, and shall be selected from among those most recently built.

The same procedure shall be followed in the matter of the cession by Germany to France of —

(1) the installations, berthing, and anchorage accommodation, platforms, docks, warehouses, plant, etc., which German subjects or German companies owned on the 1st August, 1914, in the port of Rotterdam, and

(2) the shares or interests which Germany or German nationals possessed in such installations at the same date.

The amount and specifications of such cessions shall be determined within one year of the coming into force of the present treaty by an arbitrator or arbitrators appointed by the United States of America, due regard being had to the legitimate needs of the parties concerned.

The cessions provided for in the present article shall entail a credit of which the total amount, settled in a lump sum by the arbitrator or arbitrators mentioned above, shall not in any case exceed the value of the capital expended in the initial establishment of the ceded material and installations, and shall be set off against the total sums due from Germany; in consequence, the indemnification of the proprietors shall be a matter for Germany to deal with.

Article 358.— Subject to the obligation to comply with the provisions of the Convention of Mannheim or of the convention which may be substituted therefor, and to the stipulations of the present treaty, France shall have on the whole course of the Rhine included between the two extreme points of the French frontiers —

(a) the right to take water from the Rhine to feed navigation and irrigation canals (constructed or to be constructed) or for any other purpose, and to execute on the German bank all works necessary for the exercise of this right;

(b) the exclusive right to the power derived from works of regulation on the river, subject to the payment to Germany of the value of half the power actually produced, this payment, which will take into account the cost of the works necessary for producing the power, being made either in money or in power and in default of agreement being determined by arbitration. For this purpose France alone shall have the right to carry out in this part of the river all works of regulation (weirs or other works) which she may consider necessary for the production of power. Similarly, the right of taking water from the Rhine is accorded to Belgium to feed the Rhine-Meuse navigable waterway provided for below.

The exercise of the rights mentioned under (a) and (b) of the present article shall not interfere with navigability nor reduce the facilities for navigation, either in the bed of the Rhine or in the derivations which may be substituted therefor, nor shall it involve any increase in the tolls formerly levied under the convention in force. All proposed schemes shall be laid before the Central Commission in order that that commission may assure itself that these conditions are complied with.

To insure the proper and faithful execution of the provisions contained in (a) and (b) above, Germany:

(i) binds herself not to undertake or to allow the construction of any lateral canal or any derivation on the right bank of the river opposite the French frontiers;

(ii) recognizes the possession by France of the right of support on and the right of way over all lands situated on the right bank which may be required in order to survey, to build, and to operate weirs which France, with the consent of the Central Commission, may subsequently decide to establish. In accordance with such consent, France shall be entitled to decide upon and fix the limits of the necessary sites, and she shall be permitted to occupy such lands after a period of two months after simple notification, subject to the payment by her to Germany of indemnities of which the total amount shall be fixed by the Central Commission. Germany shall make it her business to indemnify the proprietors whose property will be burdened with such servitudes or permanently occupied by the works.

Should Switzerland so demand, and if the Central Commission approves, the same rights shall be accorded to Switzerland for the part of the river forming her frontier with other riparian States;

(iii) shall hand over to the French Government, during the month following the coming into force of the present treaty, all projects, designs, drafts of concessions and of specifications concerning the regulation of the Rhine for any purpose whatever which have been drawn up or received by the Governments of Alsace-Lorraine or of the Grand Duchy of Baden.

Article 359.— Subject to the preceding provisions, no works shall be carried out in the bed or on either bank of the Rhine where it forms the boundary of France and Germany without the previous approval of the Central Commission or of its agents.

Article 360.— France reserves the option of substituting herself as regards the rights and obligations resulting from agreements arrived at between the Government of Alsace-Lorraine and the Grand Duchy of Baden concerning the works to be carried out on the Rhine; she may also denounce such agreements within a term of five years dating from the coming into force of the present treaty.

France shall also have the option of causing works to be carried out which may be recognized as necessary by the Central Commission for the upkeep or improvement of the navigability of the Rhine above Mannheim.

Article 361.— Should Belgium, within a period of 25 years from the coming into force of the present treaty decide to create a deep-draught Rhine-Meuse navigable waterway, in the region of Ruhrort, Germany shall be bound to construct, in accordance with plans to be communicated to her by the Belgian Government, after agreement with the Central Commission, the portion of this navigable waterway situated within her territory.

The Belgian Government shall, for this purpose, have the right to carry out on the ground all necessary surveys.

Should Germany fail to carry out all or part of these works, the Central Commission shall be entitled to carry them out instead; and, for this purpose, the commission may decide upon and fix the limits of the necessary sites and occupy the ground after a period of two months after simple notification, subject to the payment of indemnities to be fixed by it and paid by Germany.

This navigable waterway shall be placed under the same administrative régime as the Rhine itself, and the division of the cost of initial construction, including the above indemnities, among the States crossed thereby shall be made by the Central Commission.

Article 362.— Germany hereby agrees to offer no objection to any proposals of the Central Rhine Commission for extending its jurisdiction:

(1) to the Moselle below the Franco-Luxemburg frontier down to the Rhine, subject to the consent of Luxemburg;

(2) to the Rhine above Basle up to the Lake of Constance, subject to the consent of Switzerland;

(3) to the lateral canals and channels which may be established either to duplicate or to improve naturally navigable sections of the Rhine or the Moselle, or to connect two naturally navigable sections of these rivers, and also any other parts of the Rhine River system which may be covered by the General Convention provided for in Article 338 above.

Chapter V.—Clauses giving to the Czechoslovak State the Use of Northern Ports.

Article 363.— In the ports of Hamburg and Stettin, Germany shall lease to the Czechoslovak State, for a period of ninety-nine years, areas which shall be placed under the general régime of free zones and shall be used for the direct transit of goods coming from or going to that State.

Article 364.— The delimitation of these areas, and their equipment, their exploitation, and in general all conditions for their utilization, including the amount of the rental, shall be decided by a commission consisting of one delegate of Germany, one delegate of the Czechoslovak State and one delegate of Great Britain. These conditions shall be susceptible of revision every ten years in the same manner.

Germany declares in advance that she will adhere to the decisions so taken.

SECTION III.— RAILWAYS.

Chapter I.—Clauses Relating to International Transport.

Article 365.— Goods coming from the territories of the Allied and Associated Powers, and going to

Germany, or in transit through Germany from or to the territories of the Allied and Associated Powers, shall enjoy on the German railways as regards charges to be collected (rebates and drawbacks being taken into account) facilities, and all other matters, the most favorable treatment applied to goods of the same kind carried on any German lines, either in internal traffic, or for export, import or in transit, under similar conditions of transport, for example as regards length of route. The same rule shall be applied, on the request of one or more of the Allied and Associated Powers, to goods specially designated by such power or powers coming from Germany and going to their territories.

International tariffs established in accordance with the rates referred to in the preceding paragraph and involving through waybills shall be established when one of the Allied and Associated Powers shall require it from Germany.

Article 366.— From the coming into force of the present treaty the high contracting parties shall renew, in so far as concerns them and under the reserves indicated in the second paragraph of the present Article, the conventions and arrangements signed at Berne on the 14th of October, 1890, the 20th September, 1893, the 16th July, 1895, the 16th June, 1898, and the 19th September, 1906, regarding the transportation of goods by rail.

If within five years from the date of the coming into force of the present treaty a new convention for the transportation of passengers, luggage and goods by rail shall have been concluded to replace the Berne convention of the 14th October, 1890 and the subsequent additions referred to above, this new convention and the supplementary provisions for international transport by rail which may be based on it shall bind Germany even if she shall have refused to take part in the preparation of the convention or to subscribe to it. Until a new convention shall have been concluded, Germany shall conform to the provisions of the Berne Convention and the subsequent additions referred to above, and to the current supplementary provisions.

Article 367.— Germany shall be bound to cooperate in the establishment of through ticket services (for passengers and their luggage) which shall be required by any of the Allied and Associated Powers to insure their communication by rail with each other and with all other countries by transit across the territories of Germany; in particular Germany shall, for this purpose, accept trains and carriages coming from the territories of the Allied and Associated Powers and shall forward them with a speed at least equal to that of her best long-distance trains on the same lines. The rates applicable to such through services shall not in any case be higher than the rates collected on German internal services for the same distance, under the same conditions of speed and comfort.

The tariffs applicable under the same conditions of speed and comfort to the transportation of emigrants going to or coming from ports of the Allied and Associated Powers and using the German railways, shall not be at a higher kilometric rate than the most favorable tariffs (drawbacks and rebates being taken into account) enjoyed on the said railways by emigrants going to or coming from any other ports.

Article 368.— Germany shall not apply specially to such through services or to the transportation of emigrants going to or coming from the ports of the Allied and Associated Powers, any technical, fiscal or administrative measures such as measures of customs examination, general police, sanitary police, and control, the result of which would be to impede or delay such services.

Article 369.— In case of transport partly by rail and partly by internal navigation, with or without through way-bill, the preceding Articles shall apply to the part of the journey performed by rail.

Chapter II.—Rolling Stock.

Article 370.— Germany undertakes that German wagons shall be fitted with apparatus allowing:

(1) of their inclusion in goods trains on the lines such of the Allied and Associated Powers as are parties to the Berne Convention of May 15, 1886, as modified on May 18, 1907, without hampering the action of the continuous brake which may be adopted in such countries within ten years of the coming into force of the present treaty, and

(2) of the acceptance of wagons of such countries in all goods trains on the German lines.

The rolling stock of the Allied and Associated Powers shall enjoy on the German lines the same treatment as German rolling stock as regards movement, upkeep and repairs.

Chapter III.—Cessions of Railway Lines.

Article 371.— Subject to any special provisions concerning the cession of ports, waterways and railways situated in the territories over which Germany abandons her sovereignty, and to the financial conditions relating to the concessionaries and the pensioning of the personnel, the cession of railways will take place under the following conditions:

1. The works and installations of all the railroads shall be handed over complete and in good condition.

2. When a railway system possessing its own rolling-stock is handed over in its entirety by Germany to one of the Allied and Associated Powers, such stock shall be handed over complete, in accordance with the last inventory before November 11th, 1918, and in a normal state of upkeep.

3. As regards lines without any special rolling-stock, commissions of experts designated by the Allied and Associated Powers, on which Germany shall be represented, shall fix the proportion of the stock existing on the system to which those lines belong to be handed over. These commissions shall have regard to the amount of material registered on these lines in the last inventory before November 11th, 1918, the length of track (sidings included), and the nature and amount of traffic. These commissions shall also specify the locomotives, carriages and wagons to be handed over in each case; they shall decide upon the conditions of their acceptance, and shall make the provisional arrangements necessary to insure their repair in German workshops.

4. Stocks of stores, fittings and plant shall be handed over under the same conditions as the rolling-stock.

The provisions of paragraphs 3 and 4 above shall be applied to the lines of former Russian Poland converted by Germany to the German gauge, such lines being regarded as detached from the Prussian State System.

Chapter IV.—Provisions Relating to Certain Railway Lines.

Article 372.— When as a result of the fixing of new frontiers a railway connection between two parts of the same country crosses another country, or a branch line from one country has its terminus in another, the conditions of working, if not specifically provided for in the present treaty, shall be laid down in a convention between the railway administrations concerned. If the administration cannot come to an agreement as to the terms of such convention, the points of difference shall be decided by commissions of experts composed as provided in the preceding Article.

Article 373.— Within a period of five years from the coming into force of the present treaty the Czechoslovak State may require the construction of a railway line in German territory between the stations of Schlauney and Nachod. The cost of construction shall be borne by the Czechoslovak State.

Article 374.— Germany undertakes to accept, within ten years of the coming into force of the present treaty, on request being made by the Swiss Government after agreement with the Italian Government, the denunciation of the International Convention of the 13th October, 1909, relative to the St. Gothard railway. In the absence of agreement as to the conditions of such denunciation, Germany hereby agrees to accept the decision of an arbitrator designated by the United States of America.

Chapter V.—Transitory Provisions.

Article 375.— Germany shall carry out the instructions given her, in regard to transport, by an authorized body acting on behalf of the Allied and Associated Powers:

1. For the carriage of troops under the provisions of the present treaty, and of material, ammunition and supplies for army use.

2. As a temporary measure, for the transportation of supplies for certain regions, as well as for the restoration, as rapidly as possible, of the normal conditions of transport, and for the organization of postal and telegraphic services.

SECTION IV.— DISPUTES AND REVISION OF PERMANENT CLAUSES.

Article 376.— Disputes which may arise between interested powers with regard to the interpretation and application of the preceding articles shall be settled as provided by the League of Nations.

Article 377.—At any time the League of Nations may recommend the revision of such of these Articles as relate to a permanent administrative régime.

Article 378.— The stipulations in Articles 321 to 330, 332, 365, and 367 to 369 shall be subject to revision by the Council of the League of Nations at any time after five years from the coming into force of the present treaty.

Failing such revision, no Allied or Associated Power can claim after the expiration of the above period of five years the benefit of any of the stipulations in the Articles enumerated above on behalf of any portion of its territories in which reciprocity is not accorded in respect of such stipulations. The period of five years during which reciprocity cannot be demanded may be prolonged by the Council of the League of Nations.

SECTION V.— SPECIAL PROVISION.

Article 379.— Without prejudice to the special obligations imposed on her by the present treaty for the benefit of the Allied and Associated Powers, Germany undertakes to adhere to any general conventions regarding the international régime of transit, waterways, ports or railways which may be concluded by the Allied and Associated Powers, with the approval of the League of Nations, within five years of the coming into force of the present treaty.

SECTION VI.— CLAUSES RELATING TO THE KIEL CANAL.

Article 380.— The Kiel Canal and its approaches shall be maintained free and open to the vessels of commerce and of war of all nations at peace with Germany on terms of entire equality.

Article 381.— The nationals, property, and vessels of all powers shall, in respect to charges, facilities, and in all other respects, be treated on a footing of perfect equality in the use of the canal, no distinction being made to the detriment of nationals, property, and vessels of any power between them and the nationals, property, and vessels of Germany or of the most favored nations.

No impediment shall be placed on the movement of persons or vessels other than those arising out of police, customs, sanitary, emigration or immigration regulations, and those relating to the import or export of prohibited goods. Such regulations must be reasonable and uniform and must not unnecessarily impede traffic.

Article 382.— Only such charges may be levied on vessels using the canal or its approaches as are intended to cover in an equitable manner the cost of maintaining in a navigable condition, or if improving, the canal or its approaches, or to meet expenses incurred in the interests of navigation. The schedule of such charges shall be calculated on the basis of such expenses, and shall be posted up in the ports.

These charges shall be levied in such a manner as to render any detailed examination of cargoes unnecessary, except in the case of suspected fraud or contravention.

Article 383.— Goods in transit may be placed under seal or in the custody of customs agents; the leading and unloading of goods, and the embarkation and disembarkation of passengers, shall only take place in the ports specified by Germany.

Article 384.— No charge of any kind other than those provided for in the present treaty shall be levied along the course or at the approaches of the Kiel Canal.

Article 385.— Germany shall be bound to take suitable measures to remove any obstacle or danger to navigation, and to insure the maintenance of good conditions of navigation. She shall not undertake any works of a nature to impede navigation on the canal or its approaches.

Article 386.— In the event of violation of any of the conditions of Articles 380 to 386, or of disputes as to the interpretation of these articles, any interested power can appeal to the jurisdiction instituted for the purpose by the League of Nations.

In order to avoid reference of small questions to the League of Nations, Germany will establish a local authority at Kiel qualified to deal with disputes in the first instance and to give satisfaction so far as possible to complaints which may be presented through the consular representatives of the interested powers.

PART XIII.— LABOR.

SECTION I.— ORGANIZATION OF LABOR.

Whereas the League of Nations has for its object the establishment of universal peace and such a peace can be established only if it is based upon social justice:

And whereas conditions of labor exist involving such injustice, hardship, and privation to large numbers of people as to produce unrest so great that the peace and harmony of the world are imperiled; and an improvement of those conditions is urgently required: as, for example, by the regulations of the hours of work, including the establishment of a maximum working day and week, the regulation of the labor supply, the prevention of unemployment, the provision of an adequate living wage, the protection of the worker against sickness, disease, and injury arising out of his employment, the protection of the children, young persons, and women, provision for old age and injury, protection of the interests of workers when employed in countries other than their own, recognition of the principle of freedom of association, the organization of vocational and technical education, and other measures:

Whereas also the failure of any nation to adopt humane conditions of labor is an obstacle in the way of other nations which desire to improve the conditions in their own countries:

The high contracting parties, moved by sentiments of justice and humanity as well as by the desire to secure the permanent peace of the world, agree to the following:

Chapter I.—Organization.

Article 387.—A permanent organization is hereby established for the promotion of the objects set forth in the preamble.

The original members of the League of Nations shall be the original members of this organization, and hereafter membership of the League of Nations shall carry with it membership of the said organization.

Article 388.— The permanent organization shall consist of:

(i) a General Conference of Representatives of the Members, and,

(ii) an International Labor Office controlled by the governing body described in Article 393.

Article 389.— The meetings of the General Conference of Representatives of the Members shall be held from time to time as occasion may require, and at least once in every year. It shall be composed of four representatives of each of the members, of whom two shall be Government delegates and the two others shall be delegates representing respectively the employers and the workpeople of each of the members.

Each delegate may be accompanied by advisers, who shall not exceed two in number for each item on the agenda of the meeting. When questions specially affecting women are to be considered by the conference, one at least of the advisers should be a woman.

The members undertake to nominate non-Government delegates and advisers chosen in agreement with the industrial organizations, if such organizations exist, which are most representative of employers or workpeople, as the case may be, in their respective countries.

Advisers shall not speak except on a request made by the delegate whom they accompany and by special authorization of the President of the conference, and may not vote.

A delegate may by notice in writing addressed to the President appoint one of his advisers to act as his deputy, and the adviser, while so acting, shall be allowed to speak and vote.

The names of the delegates and their advisers will be communicated to the International Labor Office by the Government of each of the members.

The credentials of delegates and their advisers shall be subject to scrutiny by the conference, which may, by two-thirds of the votes cast by the delegates present, refuse to admit any delegate or adviser whom it deems not to have been nominated in accordance with this article.

Article 390.— Every delegate shall be entitled to vote individually on all matters which are taken into consideration by the conference.

If one of the members fails to nominate one of the non-Government delegates whom it is entitled to nominate, the other non-Government delegates shall be allowed to sit and speak at the conference, but not to vote.

If, in accordance with Article 389, the conference refuses admission to a delegate of one of the members, the provisions of the present article shall apply as if that delegate had not been nominated.

Article 391.— The meetings of the conference shall be held at the seat of the League of Nations, or at such other place as may be decided by the conference at

a previous meeting by two-thirds of the votes cast by the delegates present.

Article 392.— The International Labor Office shall be established at the seat of the League of Nations as part of the organization of the League.

Article 393.— The International Labor Office shall be under the control of a governing body consisting of twenty-four persons, appointed in accordance with the following provisions:

The governing body of the International Labor Office shall be constituted as follows:

Twelve persons representing the Governments;

Six persons elected by the delegates to the confrence representing the employers;

Six persons elected by the delegates to the conference representing the workers.

Of the twelve persons representing the Governments, eight shall be nominated by the members which are of the chief industrial importance, and four shall be nominated by the members selected for the purpose by the Government delegates to the conference excluding the delegates of the eight members mentioned above.

Any question as to which are the members of the chief industrial importance shall be decided by the council of the League of Nations.

The period of office of the members of the governing body will be three years. The method of filling vacancies and other similar questions may be determined by the governing body subject to the approval of the conference.

The governing body shall, from time to time, elect one of its members to act as its Chairman, shall regulate its own procedure, and shall fix its own times of meeting. A special meeting shall be held if a writtten request to that effect is made by at least ten members of the governing body.

Article 394.— There shall be a Director of the International Labor Office, who shall be appointed by the governing body, and, subject to the instructions of the Governing body, shall be responsible for the efficient conduct of the International Labor Office and for such other duties as may be assigned to him.

The Director or his deputy shall attend all meetings of the governing body.

Article 395.— The staff of the International Labor Office shall be appointed by the Director, who shall, as far as is possible with due regard to the efficiency of the work of the Office, select persons of different nationalities. A certain number of these persons shall be women.

Article 396.— The functions of the International Labor Office shall include the collection and distribution of information on all subjects relating to the international adjustment of conditions of industrial life and labor, and particularly the examination of subjects which it is proposed to bring before the conference with a view to the conclusion of international conventions, and the conduct of such special investigations as may be ordered by the conference.

It will prepare the agenda for the meetings of the conference.

It will carry out the duties required of it by the provisions of this part of the present treaty in connection with international disputes.

It will edit and publish in French and English, and in such other languages as the governing body may think desirable, a periodical paper dealing with problems of industry and employment of international interest.

Generally, in addition to the functions set out in this Article, it shall have such other powers and duties as may be assigned to it by the conference.

Article 397.— The Government departments of any of the members which deal with questions of industry and employment may communicate directly with the Director through the representative of their Government on the governing body of the International Labor Office, or, failing any such representative, through such other qualified official as the Government may nominate for the purpose.

Article 398.— The International Labor Office shall be entitled to the assistance of the Secretary-General of the League of Nations in any matter in which it can be given.

Article 399.— Each of the members will pay the traveling and subsistence expenses of its delegates and their advisers and of its representatives attending the meetings of the conference or governing body, as the case may be.

All the other expenses of the International Labor Office and of the meetings of the conference or governing body shall be paid to the Director by the Secretary-General of the League of Nations out of the general funds of the League.

The Director shall be responsible to the Secretary-General of the League for the proper expenditure of all moneys paid to him in pursuance of this Article.

Chapter II.—Procedure.

Article 400.— The agenda of all meetings of the conference will be settled by the governing body, who shall consider any sugggestion as to the agenda that may be made by the Government of any of the members or by any representative organization recognized for the purpose of Article 389.

Article 401.— The Director shall act as the Secretary of the Conference, and shall transmit the agenda so as to reach the members four months before the meeting of the conference, and, through them, the non-Government delegates when appointed.

Article 402.— Any of the Governments of the members may formally object to the inclusion of any item or items in the agenda. The grounds for such objection shall be set forth in a reasoned statement addressed to the Director, who shall circulate it to all the members of the permanent organization.

Items to which such objection has been made shall not, however, be excluded from the agenda if at the conference a majority of two-thirds of the votes cast by delegates present is in favor of considering them.

If the conference decides (otherwise than under the preceding paragraph) by two-thirds of the votes cast by the delegates present that any subject shall be considered by the conference, that subject shall be included in the agenda for the following meeting.

Article 403.— The conference shall regulate its own procedure, shall elect its own President, and may appoint committees to consider and report on any matter.

Except as otherwise expressly provided in this part of the present treaty, all matters shall be decided by a simple majority of the votes cast by the delegates present.

The voting is void unless the total number of votes cast is equal to half the number of the delegates attending the conference.

Article 404.— The conference may add to any committees which it appoints technical experts, who shall be assessors without power to vote.

Article 405.— When the conference has decided on the adoption of proposals with regard to an item in the agenda, it will rest with the conference to determine whether these proposals should take the form: (a) of a recommendation to be submitted to the members for consideration with a view to effect being given to it by national legislation or otherwise, or (b) of a draft international convention for ratification by the members.

In either case a majority of two-thirds of the votes cast by the delegates present shall be necessary on the final vote for the adoption of the recommendation or draft convention, as the case may be, by the conference.

In framing any recommendation or draft convention of general application the conference shall have due regard to those countries in which climatic conditions, the imperfect development of industrial organization or other special cidcumstances make the industrial conditions substantially different and shall suggest the modifications, if any, which it considers may be required to meet the case of such countries.

A copy of the recommendation or draft convention shall be authenticated by the signature of the President of the conference and of the Director and shall be deposited with the Secretary-General of the League of Nations. The Secretary-General will communicate a certified copy of the recommendation or draft convention to each of the members.

Each of the members undertakes that it will, within the period of one year at most from the closing of the session of the conference, or if it is impossible owing to exceptional circumstances to do so within the period of one year, then at the earliest practicable moment and in no case later than eighteen months rrom the closing of the session of the conference, bring the recommendation or draft convention before the authority or authorities within whose competence the matter lies, for the enactment of legislation or other action.

In the case of a recommendation the members will inform the Secretary-General of the action taken.

In the case of a draft convention, the member will, if it obtains the consent of the authority or authorities within whose competence the matter lies, communicate the formal ratification of the convention to the Secretary-General and will take such action as may be necessary to make effective the provisions of such convention.

If on a recommendation no legislative or other action is taken to make a recommendation effective, or

if the draft convention fails to obtain the consent of the authority or authorities within whose competence the matter lies, no further obligation shall rest upon the member.

In the case of a federal state, the power of which to enter into conventions on labor matters is subject to limitations, it shall be in the discretion of that Government to treat a draft convention to which such limitations apply as a recommendation only, and the provisions of this article with respect to recommendations shall apply in such case.

The above Article shall be interpreted in accordance with the following principle:

In no case shall any member be asked or required, as a result of the adoption of any recommendation or draft convention by the conference to lessen the protection afforded by its existing legislation to the workers concerned.

Article 406.— Any convention so ratified shall be registered by the Secretary-General of the League of Nations, but shall only be binding upon the members which ratify it.

Article 407.—If any convention coming before the conference for final consideration fails to secure the support of two-thirds of the votes cast by the delegates present, it shall nevertheless be within the right of any of the members of the permanent organization to agree to such convention among themselves.

Any convention so agreed to shall be communicated by the Governments concerned to the Secretary-General of the League of Nations, who shall register it.

Article 408.— Each of the members agrees to make an annual report to the International Labor Office on the measures which it has taken to give effect to the provisions of conventions to which it is a party. These reports shall be made in such form and shall contain such particulars as the governing body may request. The Director shall lay a summary of these reports before the next meeting of the conference.

Article 409.— In the event of any representation being made to the International Labor Office by an industrial association of employers or of workers that any of the members has failed to secure in any respect the effective observance within its jurisdiction of any convention to which it is a party, the Governing Body may communicate this representation to the Government against which it is made and may invite that Government to make such statement on the subject as it may think fit.

Article 410.— If no statement is received within a reasonable time from the Government in question, or if the statement when received is not deemed to be satisfactory by the Governing Body, the latter shall have the right to publish the representation and the statement, if any, made in reply to it.

Article 411.— Any of the members shall have the right to file a complaint with the International Labor Office if it is not satisfied that any other member is securing the effective observance of any convention which both have ratified in accordance with the foregoing articles.

The Governing Body may, if it thinks fit, before referring such a complaint to a Commission of Inquiry, as hereinafter provided for, communicate with the Government in question in the manner described in Article 409.

If the Governing Body does not think it necessary to communicate the complaint to the Government in question, or if, when they have made such communication, no statement in reply has been received within a reasonable time which the Governing Body considers to be satisfactory, the Governing Body may apply for the appointment of a Commission of Inquiry to consider the complaint and to report thereon.

The Governing Body may adopt the same procedure either of its own motion or on receipt of a complaint from a Delegate to the Conference.

When any matter arising out of Articles 410 or 411 is being considered by the Governing Body, the Government in question shall, if not already represented thereon, be entitled to send a representative to take part in the proceedings of the Governing Body while the matter is under consideration. Adequate notice of the date on which the matter will be considered shall be given to the Government in question.

Article 412.— The Commission of Inquiry shall be constituted in accordance with the following provisions:

Each of the members agrees to nominate within six months of the date on which the present Treaty comes into force three persons of industrial experience, of whom one shall be a representative of employers, one a representative of workers, and one a person of independent standing, who shall together form a panel from which the members of the Commission of Inquiry shall be drawn.

The qualifications of the persons so nominated shall be subject to scrutiny by the Governing Body, which may by two-thirds of the votes cast by the representatives present refuse to accept the nomination of any person whose qualifications do not in its opinion comply with the requirements of the present article.

Upon the application of the Governing Body, the Secretary-General of the League of Nations shall nominate three persons, one from each section of this panel, to constitute the Commission of Inquiry, and shall designate one of them as the President of the commission. None of these three persons shall be a person nominated to the panel by any member directly concerned in the complaint.

Article 413.— The members agree that, in the event of the reference of a complaint to a commission of inquiry under Article 411, they will each, whether directly concerned in the complaint or not, place at the disposal of the commission all the information in their possession which bears upon the subject-matter of the complaint.

Article 414.—When the Commission of Inquiry has fully considered the complaint, it shall prepare a report embodying its findings on all questions of fact relevant to determining the issue between the parties and containing such recommendations as it may think proper as to the steps which should be taken to meet the complaint and the time within which they should be taken.

It shall also indicate in this report the measures, if any, of an economic character against a defaulting Government which it considers to be appropriate, and which it considers other Governments would be justified in adopting.

Article 415.— The Secretary-General of the League of Nations shall communicate the report of the Commission of Inquiry to each of the Governments concerned in the complaint, and shall cause it to be published.

Each of these Governments shall within one month inform the Secretary-General of the League of Nations whether or not it accepts the recommendations contained in the report of the Commission; and if not, whether it proposes to refer the complaint to the Permanent Court of International Justice of the League of Nations.

Article 416.— In the event of any member failing to take the action required by Article 405, with regard to a recommendation or draft convention, any other member shall be entitled to refer the matter to the Permanent Court of International Justice.

Article 417.— The decision of the Permanent Court of International Justice in regard to a complaint or matter which has been referred to it in pursuance of Article 415 or Article 416 shall be final.

Article 418.— The Permanent Court of International Justice may affirm, vary or reverse any of the findings or recommendations of the Commission of Inquiry, if any, and shall in its decision indicate the measures, if any, of an economic character which it considers to be appropriate, and which other Governments would be justified in adopting against a defaulting Government.

Article 419.— In the event of any member failing to carry out within the time specified the recommendations, if any, contained in the report of the Commission of Inquiry, or in the decision of the Permanent Court of International Justice, as the case may be, any other member may take against that member the measures of an economic character indicated in the report of the Commission or in the decision of the Court as appropriate to the case.

Article 420.— The defaulting Government may at any time inform the Governing Body that it has taken the steps necessary to comply with the recommendations of the Commission of Inquiry or with those in the decision of the Permanent Court of International Justice, as the case may be, and may request it to apply to the Secretary-General of the League to constitute a commission of Inquiry to verify its contention. In this case the provisions of Articles 412, 413, 414, 415, 417 and 418 shall apply, and if the report of the Commission of Inquiry or the decision of the Permanent Court of International Justice is in favor of the defaulting Government, the other Governments shall forthwith discontinue the measures of an economic character that they have taken against the defaulting Government.

Chapter III.—General.

Article 421.— The members engage to apply conventions which they have ratified in accordance with

the provisions of this part of the present treaty to their colonies, protectorates, and possessions which are not fully self-governing.

1. Except where owing to the local conditions the convention is inapplicable, or

2. Subject to such modifications as may be necessary to adapt the convention to local conditions.

And each of the members shall notify to the International Labor Office the action taken in respect of each of its colonies, protectorates, and possessions which are not fully self-governing.

Article 422.— Amendments to this part of the present treaty which are adopted by the Conference by a majority of two-thirds of the votes cast by the delegates present shall take effect when ratified by the States whose representatives compose the Council of the League of Nations and by three-fourths of the members.

Article 423.— Any question or dispute relating to the interpretation of this part of the present treaty or of any subsequent convention concluded by the members in pursuance of the provisions of this part of the present treaty shall be referred for decision to the Permanent Court of International Justice.

Chapter IV.—Transitory Provisions.

Article 424.— The first meeting of the Conference shall take place in October, 1919. The place and agenda for this meeting shall be as specified in the Annex hereto.

Arrangements for the convening and the organization of the first meeting of the Conference will be made by the Government designated for the purpose in the said Annex. That Government shall be assisted in the preparation of the documents for submission to the Conference by an International Committee constituted as provided in the said Annex.

The expenses of the first meeting and of all subsequent meetings held before the League of Nations has been able to establish a general fund, other than the expenses of delegates and their advisers, will be borne by the members in accordance with the apportionment of the expenses of the International Bureau of the Universal Postal Union.

Article 425.— Until the League of Nations has been constituted all communications which under the provisions of the foregoing articles should be addressed to the Secretary-General of the League will be preserved by the Director of the International Labor Office, who will transmit them to the Secretary-General of the League.

Article 426.— Pending the creation of a Permanent Court of International Justice, disputes which in accordance with this part of the present treaty would be submitted to it for decision will be referred to a tribunal of three persons appointed by the Council of the League of Nations.

ANNEX.

First Meeting of Annual Labor Conference, 1919.

The place of meeting will be Washington.

The Government of the United States of America is requested to convene the conference.

The International Organizing Committee will consist of seven members, appointed by the United States of America, Great Britain, France, Italy, Japan, Belgium, and Switzerland. The committee may, if it thinks necessary, invite other members to appoint representatives.

Agenda:

1. Application of principle of the 8-hours day or of the 48-hours week.
2. Question of preventing or providing against unemployment.
3. Women's employment:
   - (a) Before and after childbirth, including the question of maternity benefit.
   - (b) During the night.
   - (c) In unhealthy processes.
4. Employment of children:
   - (a) Minimum age of employment.
   - (b) During the night.
   - (c) In unhealthy processes.
5. Extension and application of the International Conventions adopted at Berne in 1906 on the prohibition of night work for women employed in industry and the prohibition of the use of white phosphorus in the manufacture of matches.

SECTION II.— GENERAL PRINCIPLES.

Article 427.— The High Contracting Parties, recognizing that the well-being, physical, moral, and intellectual, of industrial wage earners is of supreme international importance, have framed, in order to further this great end, the permanent machinery provided for in Section I and associated with that of the League of Nations.

They recognize that differences of climate, habits, and customs, of economic opportunity and industrial tradition, make strict uniformity in the conditions of labor difficult of immediate attainment. But, holding as they do, that labor should not be regarded merely as an article of commerce, they think that there are methods and principles for regulating labor conditions which all industrial communities should endeavor to apply, so far as their special circumstances will permit.

Among these methods and principles, the following seem to the High Contracting Parties to be of special and urgent importance:

First — The guiding principle above enunciated that labor should not be regarded merely as a commodity or article of commerce.

Second — The right of association for all lawful purposes by the employed as well as by the employers.

Third — The payment to the employed of a wage adequate to maintain a reasonable standard of life as this is understood in their time and country.

Fourth — The adoption of an eight hours day or a forty-eight hours week as the standard to be aimed at where it has not already been attained.

Fifth — The adoption of a weekly rest of at least twenty-four hours, which should include Sunday wherever practicable.

Sixth — The abolition of child labor and the imposition of such limitations on the labor of young persons as shall permit the continuation of their education and assure their proper physical development.

Seventh — The principle that men and women should receive an equal remuneration for work of equal value.

Eighth — The standard set by law in each country with respect to the conditions of labor should have due regard to the equitable economic treatment of all workers lawfully resident therein.

Ninth — Each State should make provision for a system of inspection in which women should take part in order to insure the enforcement of the laws and regulations for the protection of the employed.

Without claiming that these methods and principles are either complete or final, the High Contracting Parties are of opinion that they are well fitted to guide the policy of the League of Nations; and that, if adopted by the industrial communities who are members of the League, and safeguarded in practice by an adequate system of such inspection, they will confer lasting benefits upon the wage earners of the world.

PART XIV.— GUARANTEES.

SECTION I.— WESTERN EUROPE.

Article 428.— As a guarantee for the execution of the present treaty by Germany, the German territory situated to the west of the Rhine, together with the bridgeheads, will be occupied by Allied and Associated troops for a period of fifteen years from the coming into force of the present treaty.

Article 429.— If the conditions of the present treaty are faithfully carried out by Germany, the occupation referred to in Article 428 will be successively restricted as follows:

(i) At the expiration of five years there will be evacuated:— the bridgehead of Cologne and the territories north of a line running along the Ruhr, then along the railway Jülich, Duren, Euskirchen, Rheinbach, thence along the road Rheinbach to Sinzig, and reaching the Rhine at the confluence with the Ahr; the roads, railways and places mentioned above being excluded from the area evacuated.

(ii) At the expiration of ten years, there will be evacuated:— the bridgehead of Coblenz and the territories north of a line to be drawn from the intersection between the frontiers of Belgium, Germany and Holland, running about 4 kilometers south of Aix-la-Chapelle, then to and following the crest of Forst Gemünd, then east of the railway of the Urft Valley then along Blankenheim, Valdorf, Dreis, Ulmen to and following the Moselle from Bremm to Nehren, then passing by Kappel and Simmern, then following the ridge of the heights between Simmern and the Rhine and reaching this river at Bacharach; all the places, valleys, roads and railways mentioned above being excluded from the area evacuated.

(iii) At the expiration of fifteen years there will be evacuated:— the bridgehead of Mainz, the bridgehead of Kehl and the remainder of the German territory under occupation.

If at that date the guarantees against unprovoked

aggression by Germany are not considered sufficient by the Allied and Associated Governments the evacuation of the occupying troops may be delayed to the extent regarded as necessary for the purpose of obtaining the required guarantees.

Article 430.— In case either during the occupation or after the expiration of the fifteen years referred to above, the Reparation Commission finds that Germany refuses to observe the whole or part of her obligations under the present treaty with regard to reparation, the whole or part of the areas specified in Article 429 will be re-occupied immediately by the Allied and Associated forces.

Article 431.— If before the expiration of the period of fifteen years Germany complies with all the undertakings resulting from the present treaty, the occupying forces will be withdrawn immediately.

Article 432.— All matters relating to the occupation and not provided for by the present treaty shall be regulated by subsequent agreements, which Germany hereby undertakes to observe.

SECTION II.— EASTERN EUROPE.

Article 433.— As a guarantee for the execution of the provisions of the present treaty, by which Germany accepts definitely the abrogation of the Brest-Litovsk Treaty, and of all treaties, conventions and agreements entered into by her with the Maximalist Government in Russia, and in order to insure the restoration of peace and good government in the Baltic Provinces and Lithuania, all German troops at present in the said territories shall return to within the frontiers of Germany as soon as the Governments of the principal Allied and Associated Powers shall think the moment suitable, having regard to the internal situation of these territories. These troops shall abstain from all requisitions and seizures and from any other coercive measures, with a view to obtaining supplies intended for Germany, and shall in no way interfere with such measures for national defense as may be adopted by the provisional Governments of Esthonia, Letvia, and Lithuania.

No other German troops shall, pending the evacuation or after the evacuation is complete, be admitted to the said territories.

PART XV.— MISCELLANEOUS PROVISIONS.

Article 434.— Germany undertakes to recognize the full force of the treaties of peace and additional conventions which may be concluded by the Allied and Associated Powers with the powers who fought on the side of Germany, and to recognize whatever disposition may be made concerning the territories of the former Austro-Hungarian Monarchy, of the Kingdom of Bulgaria, and of the Ottoman Empire, and to recognize the new States within their fontiers as there laid down.

Article 435.— The high contracting parties, while they recognize the guarantees stipulated by the treaties of 1815, and especially by the Act of 20th November, 1815, in favor of Switzerland, the said guarantees constituting international obligations for the maintenance of peace, declare nevertheless that the provisions of these treaties, conventions, declarations and other supplementary acts concerning the neutralized zone of Savoy, as laid down in paragraph 1 of Article 92 of the Final Act of the Congress of Vienna, and in paragraph 2 of Article 3 of the Treaty of Paris of 20th November, 1815, are no longer consistent with present conditions. For this reason the high contracting parties take note of the agreement reached between the French Government and the Swiss Government for the abrogation of the stipulations relating to this zone which are and remain abrogated.

The high contracting parties also agree that the stipulations of the treaties of 1815 and of the other supplementary acts concerning the free zones of Upper Savoy and the Gex district are no longer consistent with present conditions, and that it is for France and Switzerland to come to an agreement together with a view to settling between themselves the status of these territories under such conditions as shall be considered suitable by both countries.

ANNEX.

1. The Swiss Federal Council has informed the French Government on the 5th May, 1919, that after examining the provisions of Article 435 in a like spirit of sincere friendship it has happily reached the conclusion that it was possible to acquiesce in it under the following conditions and reservations:

First — The neutralized zone of Haute-Savoie:

(a) It will be understood that as long as the Federal Chambers have not ratified the agreement come to between the two Governments concerning the abrogation of the stipulations in respect of the neutralized zone of Savoy nothing will be definitely settled, on one side or the other, in regard to this subject.

(b) The assent given by the Swiss Government to the abrogation of the above-mentioned stipulations presupposes, in conformity with the text adopted, the recognition of the guarantees formulated in favor of Switzerland by the treaties of 1815 and particularly by the declaration of 20th November, 1815.

(c) The agreement between the Governments of France and Switzerland for the abrogation of the above-mentioned stipulations will only be considered as valid if the treaty of peace contains this article in its present wording. In addition, the parties to the treaty of peace should endeavor to obtain the assent of the signatory powers of the treaties of 1815 and of the declaration of 20th November, 1815, which are not signatories of the present treaty of peace.

Second — Free zone of Haute-Savoie and the district of Gex.

(a) The Federal Council makes the most express reservations to the interpretation to be given to the statement mentioned in the last paragraph of the above article for insertion in the treaty of peace, which provides that "the stipulations of the treaties of 1815 and other supplementary acts concerning the free zones of Haute-Savoie and the Gex district are no longer consistent with the present conditions." The Federal Council would not wish that its acceptance of the above wording should lead to the conclusion that it would agree to the suppression of a system intended to give neighboring territory the benefit of a special régime which is appropriate to the geographical and economical situation and which has been well tested.

In the opinion of the Federal Council the question is not the modification of the customs system of the zones as set up by the treaties mentioned above, but only the regulation in a manner more appropriate to the economic conditions of the present day of the terms of the exchange of goods between the regions in question. The Federal Council has been led to make the preceding observations by the perusal of the draft convention concerning the future constitution of the zones, which was annexed to the note of April 26 from the French Government. While making the above reservations the Federal Council declares its readiness to examine in the most friendly spirit any proposals which the French Government may deem it convenient to make on the subject.

(b) It is conceded that the stipulations of the treaties of 1815 and other supplementary acts relative to the free zones will remain in force until a new arrangement is come to between France and Switzerland to regulate matters in this territory.

2. The French Government have addressed to the Swiss Government, on May 18, 1919, the following note in reply to the communication set out in the preceding paragraph:

In a note dated May 5 the Swiss Legation in Paris was good enough to inform the Government of the French Republic that the Federal Government adhered to the proposed article to be inserted in the Treaty of Peace between the Allied and Associated Governments and Germany.

The French Government have taken note with much pleasure of the agreement thus reached, and, at their request, the proposed article, which had been accepted by the Allied and Associated Governments, has been inserted under No. 435 in the peace conditions presented to the German plenipotentiaries.

The Swiss Government, in their note of May 5, on this subject, have expresed various views and reservations.

Concerning the observations relating to the free zones of Haute-Savoie and the Gex district, the French Government have the honor to observe that the provisions of the last paragraph of Article 435 are so clear that their purport cannot be misapprehended, especially where it implies that no other power but France and Switzerland will in future be interested in that question.

The French Government, on their part, are anxious to protect the interests of the French territories concerned, and, with that object, having their special situtation in view, they bear in mind the desirability of assuring them a suitable customs regime and determining, in a manner better suited to present conditions, the methods of exchanges between these territories and the adjacent Swiss territories, while taking into account the reciprocal interests of both regions.

It is understood that this must in no way prejudice the right of France to adjust her customs line in this region in conformity with her political frontier, as is

done on the other portions of her territorial boundaries, and as was done by Switzerland long ago on her own boundaries in this region.

The French Government are pleased to note on this subject in what a friendly disposition the Swiss Government take this opportunity of declaring their willingness to consider any French proposal dealing with the system to be substituted for the present régime of the said free zones, which the French Government intend to formulate in the same friendly spirit.

Moreover, the French Government have no doubt that the provisional maintenance of the régime of 1815 as to the free zones referred to in the above-mentioned paragraph of the note from the Swiss Legation of May 5, whose object is to provide for the passage from the present régime to the conventional régime, will cause no delay whatsoever in the establishment of the new situation which has been found necessary by the two Governments. This remark applies also to the ratification by the Federal Chambers, dealt with in Paragraph 1 (a), of the Swiss note of May 5, under the heading "Neutralized Zone of Haute-Savoie."

Article 436.— The high contracting parties declare and place on record that they have taken note of the treaty signed by the Government of the French Republic on July 17th, 1918, with His Serene Highness the Prince of Monaco defining the relations between France and the Principality.

Article 437.— The high contracting parties agree that, in the absence of a subsequent agreement to the contrary, the Chairman of any commission established by the present treaty shall, in the event of an equality of votes, be entitled to a second vote.

Article 438.— The Allied and Associated Powers agree that where Christian religious missions were being maintained by German societies or persons in territory belonging to them, or of which the government is intrusted to them in accordance with the present treaty, the property which these missions or missionary societies possessed, including that of trading societies whose profits were devoted to the support of missions, shall continue to be devoted to missionary purposes. In order to insure the due execution of this undertaking the Allied and Associated Governments will hand over such property to boards of trustees appointed by or approved by the Governments and composed of persons holding the faith of the mission whose property is involved.

The Allied and Associated Governments, while continuing to maintain full control as to the individuals by whom the missions are conducted, will safeguard the interests of such missions.

Germany, taking note of the above undertaking, agrees to accept all arrangements made or to be made by the Allied or Associated Government concerned for carrying on the work of the said missions or trading societies and waives all claims on their behalf.

Article 439.— Without prejudice to the provisions of the present treaty, Germany undertakes not to put forward directly or indirectly against any Allied or Associated Power, signatory of the present treaty, including those which without having declared war, have broken off diplomatic relations with the German Empire, any pecuniary claim based on events which occurred at any time before the coming into force of the present treaty.

The present stipulation will bar completely and finally all claims of this nature, which will be thenceforward extinguished, whoever may be the parties in interest.

Article 440.— Germany accepts and recognizes as valid and binding all decrees and orders concerning German ships and goods and all orders relating to the payment of costs made by any prize court of any of the Allied or Associated Powers, and undertakes not to put forward any claim arising out of such decrees or orders on behalf of any German national.

The Allied and Associated Powers reserve the right to examine in such manner as they may determine all decisions and orders of German Prize Courts, whether affecting the property rights of nationals of those powers or of neutral powers. Germany agrees to furnish copies of all the documents constituting the record of the cases, including the decisions and orders made, and to accept and give effect to the recommendations made after such examination of the cases.

The present treaty, of which the French and English texts are both authentic, shall be ratified.

The deposit of ratifications shall be made at Paris as soon as possible.

Powers of which the seat of the Goverment is outside Europe will be entitled merely to inform the Government of the French Republic through their diplomatic representative at Paris that their ratification has been given; in that case they must transmit the instrument of ratification as soon as possible.

A first procés-verbal of the deposit of ratifications will be drawn up as soon as the treaty has been ratified by Germany on the one hand, and by three of the principal Allied and Associated Powers on the other hand.

From the date of the first procés-verbal the treaty will come into force between the high contracting parties who have ratified it. For the determination of all periods of time provided for in the present treaty this date will be the date of the coming into force of the treaty.

In all other respects the treaty will enter into force for each power at the date of the deposit of its ratification.

The French Government will transmit to all the signatory powers a certified copy of the procès-verbaux of the deposit of ratifications.

IN FAITH WHEREOF the above-named plenipotentiaries have signed the present treaty.

DONE AT VERSAILLES, in a single copy which will remain deposited in the archives of the French Republic, and of which authenticated copies will be transmitted to each of the signatory powers.

(2) Treaty of Peace Between the Principal Allied and Associated Powers and Austria.

N. B.— There are many references to the German Treaty in the Austrian Treaty as printed below. It is, of course, to be borne in mind that in such clauses stated to be identical the words "Austria", "Austro-Hungary", "Austrian", etc., are substituted for the words "Germany", "German", etc. Where the dates of Germany's entering on a state of war and ceasing to be a belligerent are inserted as affecting the coming into operation of or marking a cessation of the operation of a clause, these dates in the Austrian treaty are as of 28 July 1914 and 3 Nov. 1918 respectively.

THE UNITED STATES OF AMERICA, THE BRITISH EMPIRE, FRANCE, ITALY and JAPAN,

These Powers being described in the present Treaty as the Principal Allied and Associated Powers;

BELGIUM, BOLIVIA, BRAZIL, CHINA, CUBA, ECUADOR, GREECE, GUATEMALA, HAITI, THE HEDJAZ, HONDURAS, LIBERIA, NICARAGUA, PANAMA, PERU, POLAND, PORTUGAL, ROUMANIA, THE SERB-CROAT-SLOVENE STATE, SIAM, CZECHO-SLOVAKIA and URUGUAY,

These Powers constituting, with the Principal Powers mentioned above, the Allied and Associated Powers, of the one part;

And AUSTRIA, of the other part;

Whereas on the request of the former Imperial and Royal Austro-Hungarian Government an Armistice was granted to Austria-Hungary on November 3, 1918, by the Principal Allied and Associated Powers in order that a Treaty of Peace might be concluded, and

Whereas the Allied and Associated Powers are equally desirous that the war in which certain among them were successively involved, directly or indirectly, against Austria-Hungary, and which originated in the declaration of war against Serbia on July 28, 1914, by the former Imperial and Royal Austro-Hungarian Government, and in the hostilities conducted by Germany in alliance with Austria-Hungary, should be replaced by a firm, just and durable Peace, and

Whereas the former Austro-Hungarian Monarchy has now ceased to exist, and has been replaced in Austria by a republican government, and

Whereas the Principal Allied and Associated Powers have already recognized that the Czecho-Slovak State, in which are incorporated certain portions of the said Monarchy, is a free, independent and Allied State, and

Whereas the said Powers have also recognized the union of certain portions of the said Monarchy with the territory of the Kingdom of Serbia as a free, independent and Allied State, under the name of the Serb-Croat-Slovene State, and

Whereas it is necessary, while restoring peace, to regulate the situation which has arisen from the dissolution of the said Monarchy and the formation of the said States, and to establish the government of these countries on a firm foundation of justice and equity;

For this purpose the HIGH CONTRACTING PARTIES represented as follows:

THE PRESIDENT OF THE UNITED STATES OF AMERICA, by:

The Honourable Frank Lyon POLK, Under Secretary of State;
The Honourable Henry WHITE, formerly Ambassador Extraordinary and Plenipotentiary of the United States at Rome and Paris;
General Tasker H. BLISS, Military Representative of the United States on the Supreme War Council;

HIS MAJESTY THE KING OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND AND OF THE BRITISH DOMINIONS BEYOND THE SEAS, EMPEROR OF INDIA, by:

The Right Honourable David Lloyd GEORGE, M. P., First Lord of His Treasury and Prime Minister;
The Right Honourable Arthur James BALFOUR, O. M., M. P., His Secretary of State for Foreign Affairs;
The Right Honourable Andrew BONAR LAW, M. P., His Lord Privy Seal;
The Right Honourable Viscount MILNER, G. C. B., G. C. M. G., His Secretary of State for the Colonies;
The Right Honourable George Nicoll BARNES, M. P., Minister without portfolio;
And

for the DOMINION OF CANADA, by:

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for the COMMONWEALTH OF AUSTRALIA, by:

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for the UNION OF SOUTH AFRICA, by:

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for the DOMINION OF NEW ZEALAND, by:

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for INDIA, by:

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THE PRESIDENT OF THE FRENCH REPUBLIC, by:

Mr. Georges CLEMENCEAU, President of the Council, Minister of War;
Mr. Stephen PICHON, Minister for Foreign Affairs;
Mr. Louis-Lucien KLOTZ, Minister of Finance;
Mr. André TARDIEU, Commissary General for Franco-American Military Affairs;
Mr. Jules CAMBON, Ambassador of France.

HIS MAJESTY THE KING OF ITALY, by:

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Mr. S. CRESPI, Deputy;

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HIS MAJESTY THE EMPEROR OF JAPAN, by:

Viscount CHINDA, Ambassador Extraordinary and Plenipotentiary of H. M. the Emperor of Japan at London;
Mr. K. MATSUI, Ambassador Extraordinary and Plenipotentiary of H. M. the Emperor of Japan at Paris;
Mr. H. IJUIN, Ambassador Extraordinary and Plenipotentiary of H. M. the Emperor of Japan at Rome;

HIS MAJESTY THE KING OF THE BELGIANS, by:

Mr. Paul HYMANS, Minister for Foreign Affairs, Minister of State;
Mr. Jules van den HEUVEL, Envoy Extraordinary and Minister Plenipotentiary, Minister of State;
Mr. Emile VANDERVELDE, Minister of Justice, Minister of State;

THE PRESIDENT OF THE REPUBLIC OF BOLIVIA, by:

Mr. Ismael MONTES, Envoy Extraordinary and Minister Plenipotentiary of Bolivia at Paris;

THE PRESIDENT OF THE REPUBLIC OF BRAZIL, by:

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Mr. Pandiá CALOGERAS, Deputy, formerly Minister of Finance;

THE PRESIDENT OF THE CHINESE REPUBLIC, by:

Mr. Iou TSENG-TSIANG, Minister for Foreign Affairs;
Mr. Chengting Thomas WANG, formerly Minister of Agriculture and Commerce;

THE PRESIDENT OF THE CUBAN REPUBLIC, by:

Mr. Antonio Sanchez de BUSTAMANTE, Dean of the Faculty of Law in the University of Havana, President of the Cuban Society of International Law;

THE PRESIDENT OF THE REPUBLIC OF ECUADOR, by:

Mr. DORN Y DE ALSÚA, Envoy Extraordinary and Minister Plenipotentiary of Ecuador at Paris;

HIS MAJESTY THE KING OF THE HELLENES, by:

Mr. Eleftherios VENISÉLOS, President of the Council of Ministers;
Mr. Nicolas POLITIS, Minister for Foreign Affairs;

THE PRESIDENT OF THE REPUBLIC OF GUATEMALA, by:

Mr. Joaquim MENDEZ, formerly Minister of State for Public Works and Public Instruction; Envoy Extraordinary and Minister Plenipotentiary of Guatemala at Washington, Envoy Extraordinary and Minister Plenipotentiary on special mission at Paris;

THE PRESIDENT OF THE REPUBLIC OF HAITI, by:

Mr. Tertullien GUILBAUD, Envoy Extraordinary and Minister Plenipotentiary of Haiti at Paris;

HIS MAJESTY THE KING OF THE HEDJAZ, by:

Mr. Rustem HAÏDAR;
M. Abdul Hadi AOUNI;

THE PRESIDENT OF THE REPUBLIC OF HONDURAS, by:

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THE PRESIDENT OF THE REPUPLIC OF LIBERIA, by:

The Honourable Charles Dunbar Burgess KING, Secretary of State;

THE PRESIDENT OF THE REPUBLIC OF NICARAGUA, by:

Mr. Salvador CHAMORRO, President of the Chamber of Deputies;

THE PRESIDENT OF THE REPUBLIC OF PANAMA, by:

Mr. Antonio BURGOS, Envoy Extraordinary and Minister Plenipotentiary of Panama at Madrid;

THE PRESIDENT OF THE REPUBLIC OF PERU, by:

Mr. Carlos G. CANDAMO, Envoy Extraordinary and Minister Plenipotentiary of Peru at Paris;

THE PRESIDENT OF THE POLISH REPUBLIC, by:

Mr. Ignace PADEREWSKI, President of the Council of Ministers, Minister for Foreign Affairs,
Mr. Roman DMOWSKI, President of the Polish National Committee;

THE PRESIDENT OF THE PORTUGUESE REPUBLIC, by:

Dr. Affonso COSTA, formerly President of the Council of Ministers;
Mr. Augusto SOARES, formerly Minister for Foreign Affairs;

HIS MAJESTY THE KING OF ROUMANIA, by:

Mr. Ion I. C. BRATIANO, President of the Council of Ministers, Minister for Foreign Affairs;
General Constantin COANDA, Corps Commander, A. D. C. to the King, formerly President of the Council of Ministers;

HIS MAJESTY THE KING OF THE SERBS, THE CROATS AND THE SLOVENES, by:

Mr. Nicolas P. PACHITCH, formerly President of the Council of Ministers;
Mr. Ante TRUMBIC, Minister for Foreign Affairs;
Mr. Milenko VESNITCH, Envoy Extraordinary and Minister Plenipotentiary of H. M. the King of the Serbs, the Croats and the Slovenes at Paris;

HIS MAJESTY THE KING OF SIAM, by:
Prince CHAROON, Envoy Extraordinary and Minister Plenipotentiary of H. M. the King of Siam at Paris;
Prince Traidos PRABANDHU, Under Secretary of State for Foreign Affairs;

THE PRESIDENT OF THE CZECHO-SLOVAK REPUBLIC, by:
Mr. Karel KRAMAR, President of the Council of Ministers;
Mr. Edouard BENES, Minister for Foreign Affairs;

THE PRESIDENT OF THE REPUBLIC OF URUGUAY, by:
Mr. Juan Antonio BUERO, Minister for Foreign Affairs, formerly Minister of Industry;

AUSTRIA, by:
Mr. Charles RENNER, Chancellor of the Austrian Republic.

WHO, having communicated their full powers, found in good and due form, have AGREED AS FOLLOWS:

From the coming into force of the present Treaty the state of war will terminate.

Austria is recognized under the name of the "REPUBLIC OF AUSTRIA."

From that moment, and subject to the provisions of this Treaty, official relations will exist between the Allied and Associated Powers and the Republic of Austria.

PART I.— THE COVENANT OF THE LEAGUE OF NATIONS.

(Articles 1–26 with Annex)

For text of the League of Nations Covenant see Part I, German Treaty, *supra*, p. 524.

PART II.— FRONTIERS OF AUSTRIA.

Article 27.— The frontiers of Austria shall be fixed as follows (see Map):

1. *With Switzerland and Lichtenstein:*

the present frontier.

2. *With Italy:*

From the point 2645 (Gruben J.) eastwards to point 2915 (Klopaier Spitz),

a line to be fixed on the ground passing through point 1483 on the Reschen-Nauders road;

thence eastwards to the summit of Dreiherrn Spitz (point 3505),

the watershed between the basins of the Inn to the north and the Adige to the south;

thence south-south-eastwards to point 2545 (Marchkinkele),

the watershed between the basins of the Drave to the east and the Adige to the west;

thence south-eastwards to point 2483 (Helm Spitz)

a line to be fixed on the ground crossing the Drave between Winnbach and Arnbach;

thence east-south-eastwards to point 2050 (Osternig) about 9 kilometres northwest of Tarvis,

the watershed between the basins of the Drave on the north and successively the basins of the Sextenbach, the Piave and the Tagliamento on the south;

thence east-south-eastwards to point 1492 (about 2 kilometres west of Thörl),

the watershed between the Gail and the Gailitz;

thence eastwards to point 1509 (Pec),

a line to be fixed on the ground cutting the Gailitz south of the town and station of Thörl and passing by point 1270 (Cabin Berg).

3. *On the South, and then with the Klagenfurt area,* subject to the provisions of Section II of Part III (Political Clauses for Europe):

from point 1509 (Pec) eastwards to point 1817 (Malestiger),

the crest of the Karavanken;

from point 1817 (Malestiger) and in a north-easterly direction as far as the Drave at a point situated about 1 kilometre southeast of the railway bridge on the eastern branch of the bend made by that river about 6 kilometres east of Villach,

a line to be fixed on the ground cutting the railway between Mallestig and Faak and passing through point 666 (Polana);

thence in a south-easterly direction to a point about 2 kilometres above St. Martin,

the course of the Drave;

thence in a northerly direction as far as point 871, about 10 kilometres to the east-north-east of Villach,

a line running approximately from south to north to be fixed on the ground;

thence east-north-eastwards to a point to be chosen near point 725 about 10 kilometres north-west of Klagenfurt on the administrative boundary between the districts of St. Veit and Klagenfurt,

a line to be fixed on the ground passing through points 1069 (Taubenbühel), 1045 (Gallinberg) and 815 (Freudenberg);

thence eastwards to a point to be chosen on the ground west of point 1075 (Steinbruch Kogel),

the administrative boundary between the districts of St. Veit and Klagenfurt;

thence north-eastwards to the point on the Gurk where the administrative boundary of the district of Völkermarkt leaves this river,

a line to be fixed on the ground passing through point 1076;

thence north-eastwards to point 1899 (Speikkogl),

the administrative boundary between the districts of St. Veit and Völkermarkt;

thence south-eastwards to point 842 (1 kilometre west of Kasparstein),

the north-eastern boundary of the district of Völkermarkt;

thence eastwards to point 1522 (Hühner Kogel),

a line to be fixed on the ground passing north of Lavamünd.

4. *With the Serb-Croat-Slovene State,* subject to the provisions of Section II of Part III (Political Clauses for Europe):

From point 1522 (Hühner Kogel) eastwards to point 917 (St. Lorenzen),

a line to be fixed on the ground passing through point 1330;

thence eastwards to the point where it meets the administrative boundary between the districts of Marburg and Leibnitz,

the watershed between the basins of the Drave to the south and the Saggau to the north;

thence north-eastwards to the point where this administrative boundary meets the Mur,

the above-mentioned administrative boundary;

thence to the point where it meets the old frontiers of 1867 between Austria and Hungary 5 kilometres south-east of Radkersburg,

the principal course of the Mur downstream;

thence northwards to a point to be fixed east of point 400 about 16 kilometres north of Radkersburg,

the old frontier of 1867 between Austria and Hungary;

thence north-eastwards to a point to be fixed on the watershed between the basins of the Raab and the Mur about 2 kilometres east of Toka,

a line to be fixed on the ground, passing between the villages of Bonisfalva and Gedoudvar.

This point is the point common to the three frontiers of Austria, Hungary and the Serb-Croat-Slovene State.

5. *With Hungary:*

From the point above defined north-eastwards to point 353 about 6 kilometres north-north-east of Szentgotthard,

a line to be fixed on the ground passing through point 353 (Janke B.), then west of the Radkersburg-Szentgotthard road and east of the villages of Nagyfalva, Nemetlak and Rabakersztur;

thence in a general north-easterly direction to point 234 about 7 kilometres north-north-east of Pinka-Mindszent,

a line to be fixed on the ground passing through point 323 (Hochkogel), then south of the villages of Zsamand, Nemetbükkös and Karacsfa, and between Nagysaroslak and Pinka-Mindszent;

thence northwards to point 883 (Trött Kö) about 9 kilometres south-west of Köszeg,

a line to be fixed on the ground passing through points 241, 260 and 273, then east of Nagynarda and Rohoncz and west of Dozmat and Butsching;

thence north-eastwards to point 265 (Kamenje) about 2 kilometres south-east of Nikitsch,

a line to be fixed on the ground, passing south-east of Liebing, Olmod and Locsmand, and north-west of Köszeg and the road from Köszeg to Salamonfa;

thence northwards to a point to be selected on the southern shore of Neusiedler See between Holling and Hidesgseg,

a line to be fixed on the ground, passing east of Nikitsch and Zinkendorf and west of Kövesd and Nemet-Pereszteg;

thence eastwards to point 115 situated about 8 kilometres south-west of St. Johann,

a line to be fixed on the ground, crossing the Neusiedler See, passing south of the island containing point 117, leaving in Hungary the branch railway running north-westwards from the station of Mexiko as well as the entire Einser canal, and passing south of Pamhagen;

thence northwards to a point to be selected about 1 kilometre west of Antonienhof (east of Kittsee), this

point being the point common to the three frontiers of Austria, Hungary, and the Czecho-Slovak State,

a line to be fixed on the ground, leaving entirely in Hungarian territory the Csorna-Karlburg railway and passing west of Wüst-Sommerein and Kr. Jahrndorf, and east of Andau, Nikelsdorf, D. Jahrndorf and Kittsee.

6. *With the Czecho-Slovak State:*

From the point above defined north-westwards to the bend of the old frontier of 1867 between Austria and Hungary about 2½ kilometres north-east of Berg,

a line to be fixed on the ground, cutting the Kittsee-Pressburg road about 2 kilometres north of Kittsee;

thence northwards to a point to be selected on the principal channel of navigation of the Danube about 4½ kilometres upstream from the Pressburg bridge,

a line to be fixed on the ground following as much as possible the old frontier of 1867 between Austria and Hungary;

thence westwards to the confluence of the Moravia (March) with the Danube,

the principal channel of navigation of the Danube;

thence the course of the Morava upstream, then the course of the Thaya upstream to a point to be selected about 2 kilometres south-east of the intersection of the Rabensburg-Themenau road with the Rabensburg-Lundenburg railway;

thence west-north-westwards the above-mentioned administrative boundary between Lower Austria and Moravia situated about 400 metres south of the point where this boundary cuts the Nikolsburg-Feldsberg rail way,

a line to be fixed on the ground passing through points 187 (Dlouhyvrch), 221 (Rosenbergen), 223 (Wolfsberg), 291 (Raistenberg), 249 and 279 (Kallerhaide);

thence west-northwestwards the above-mentioned administrative boundary;

thence westwards to a point to be selected about 3 kilometres east of the village of Franzensthal,

the old administrative boundary between Lower Austria and Bohemia;

thence southwards to point 498 (Gelsenberg) about 5 kilometres north-northwest of Gmund,

a line to be fixed on the ground passing east of the Rottenschachen-Zuggers road and through points 537 and 522 (G. Nagel B.);

thence southwards and then west-north-westwards to a point on the old administrative boundary between Lower Austria and Bohemia situated about 200 metres north of the point where it cuts the Gratzen-Weitra road,

a line to be fixed on the ground passing between Zuggers and Breitensee, then through the most south-easterly point of the railway bridge over the Lainsitz while leaving to Austria the town of Gmünd and to the Czecho-Slovak State the station and railway works of Gmünd (Wolfshof) and the junction of the Gmünd-Budweis and Gmünd-Wittingau railways, then passing through points 524 (Grundbühel), 577 (north of Hohenberg) and 681 (Lagerberg);

thence south-westwards the above mentioned administrative boundary, then north-westwards the old administrative boundary between Upper Austria and Bohemia to its point of junction with the frontier of Germany.

7. *With Germany:*

The frontier of August 3, 1914.

Article 28.— The frontiers described by the present Treaty are traced, for such parts as are defined, on the one in a million map attached to the present Treaty. In case of differences between the text and the maps, the text will prevail.

Article 29.— Boundary Commissions, whose composition is fixed by the present Treaty, or will be fixed by a Treaty between the Principal Allied and Associated Powers and the, or any, interested States, will have to trace these frontiers on the ground.

They shall have the power, not only of fixing those portions which are defined as "a line to be fixed on the ground," but also, where a request to that effect is made by one of the States concerned, and the Commission is satisfied that it is desirable to do so, of revising portions defined by administrative boundaries; this shall not however apply in the case of international boundaries existing in August, 1914, where the task of the Commission will confine itself to the re-establishment of sign-posts and boundary-marks.

They shall endeavour in both cases to follow as nearly as possible the descriptions given in the Treaties, taking into account as far as possible administrative boundaries and local economic interests.

The decisions of the Commissions will be taken by a majority, and shall be binding on the parties concerned.

The expenses of the Boundary Commissions will be borne in equal shares by the two States concerned.

Article 30.— In so far as frontiers defined by a waterway are concerned, the phrases "course" or "channel" used in the descriptions of the present Treaty signify, as regards non-navigable rivers, the median line of the waterway or of its principal branch, and, as regards navigable rivers, the median line of the principal channel of navigation. It will rest with the Boundary Commissions provided for by the present Treaty to specify whether the frontier line shall follow any changes of the course or channel which may take place, or whether it shall be definitely fixed by the position of the course or channel at the time when the present Treaty comes into force.

Article 31.— The various States interested undertake to furnish to the Commissions all documents necessary for their tasks, especially authentic copies of agreements fixing existing or old frontiers, all large scale maps in existence, geodetic data, surveys completed but unpublished, and information concerning the changes of frontier watercourses.

They also undertake to instruct the local authorities to communicate to the Commissions all documents, especially plans, cadastral and land books, and to furnish on demand all details regarding property, existing economic conditions, and other necessary information.

Article 32.— The various States interested undertake to give every assistance to the Boundary Commissions, whether directly or through local authorities, in everything that concerns transport, accommodation, labour, material (signposts, boundary pillars) necessary for the accomplishment of their mission.

Article 33.— The various States interested undertake to safeguard the trigonometrical points, signals, posts or frontier marks erected by the Commission.

Article 34.— The pillars will be placed so as to be intervisible; they will be numbered, and their position and their number will be noted on a cartographic document.

Article 35.— The protocols defining the boundary and the maps and documents attached thereto will be made out in triplicate, of which two copies will be forwarded to the Governments of the limitrophe States and the third to the Government of the French Republic, which will deliver authentic copies to the Powers who sign the present Treaty.

Part III.— Political Clauses for Europe.

Section I. Italy.

Article 36.— Austria renounces, so far as she is concerned, in favour of Italy all rights and title over the territory of the former Austro-Hungarian Monarchy situated beyond the frontier laid down in Article 27 (2) and lying between that frontier, the former Austro-Hungarian frontier, the Adriatic Sea, and the eastern frontier of Italy as subsequently determined.

Austria similarly renounces so far as she is concerned in favour of Italy all rights and title over other territory of the former Austro-Hungarian Monarchy which may be recognized as forming part of Italy by any treaties which may be concluded for the purpose of completing the present settlement.

A Commission composed of five members, one nominated by Italy, three by the other Principal Allied and Associated Powers, and one by Austria, shall be constituted within fifteen days from the coming into force of the present Treaty to trace on the spot the frontier line between Italy and Austria. The decisions of the Commission will be taken by a majority and shall be binding on the parties concerned.

Article 37.— Notwithstanding the provisions of Article 269 of Part X (Economic Clauses), persons having their usual residence in the territories of the former Austro-Hungarian Monarchy transferred to Italy who, during the war, have been outside the territories of the former Austro-Hungarian Monarchy or have been imprisoned, interned or evacuated, shall enjoy the full benefit of the provisions of Articles 252 and 253 of Part X (Economic Clauses).

Article 38.— A special Convention will determine the terms of repayment in Austrian currency of the special war expenditure advanced during the war by territory of the former Austro-Hungarian Monarchy transferred to Italy or by public associations in that territory on account of the Austro-Hungarian Monarchy under its legislation, such as allowances to the families of persons mobilised, requisitions, billeting of troops, and relief to persons who have been evacuated.

In fixing the amount of these sums Austria shall be credited with the amount which the territory would have contributed to Austria-Hungary to meet the expenses resulting from these payments, this contribution being calculated according to the proportion of the revenues of the former Austro-Hungarian Monarchy derived from the territory in 1913.

Article 39.— The Italian Government will collect

for its own account the taxes, dues and charges of every kind leviable in the territories transferred to Italy and not collected on November 3, 1918.

Article 40.— No sum shall be due by Italy on the ground of her entry into possession of the Palazzo Venezia at Rome.

Article 41.— Subject to the provisions of Article 204 of Part IX (Financial Clauses) relative to the acquisition of, and payment for, State property and possessions, the Italian Government is substituted in all the rights which the Austrian State possessed over all the railways in the territories transferred to Italy which were administered by the Railway Administration of the said State and which are actually working or under construction.

The same shall apply to the rights of the former Austro-Hungarian Monarchy with regard to railway and tramway concessions within the above-mentioned territories.

The frontier railway stations shall be determined by a subsequent agreement.

Article 42.— Austria shall restore to Italy within a period of three months all the wagons belonging to the Italian railways which before the outbreak of war had passed into Austria and have not returned to Italy.

Article 43.— Austria renounces as from November 3, 1918, on behalf of herself and her nationals in regard to territories transferred to Italy all rights to which she may be entitled with regard to the products of the aforsaid territories under any agreements, stipulations or laws establishing trusts, cartels or other similar organizations.

Article 44.— For a period of ten years from the coming into force of the present Treaty central electric power stations situated in Austrian territory and formerly furnishing electric power to the territories transferred to Italy or to any other establishment the exploitation of which passes to Italy shall be required to continue furnishing this supply up to an amount corresponding to the undertakings and contracts in force on November 3, 1918.

Austria further admits the right of Italy to the free use of the waters of Lake Raibl and its derivative water-course and to divert the said waters to the basin of the Korinitza.

Article 45.— (1) Judgments rendered since August 4, 1914, by the courts in the territory transferred to Italy in civil and commercial cases between the inhabitants of such territory and other nationals of the former Austrian Empire, or between such inhabitants and the subjects of the allies of the Austro-Hungarian Monarchy, shall not be carried into effect until after endorsement by the corresponding new court in such territory.

(2) All decisions rendered for political crimes or offences since August 4, 1914, by the judicial authorities of the former Austro-Hungarian Monarchy against Italian nationals, including persons who obtain Italian nationality under the present Treaty, shall be annulled.

(3) In all matters relating to proceedings initiated before the coming into force of the present Treaty before the competent authorities of the territory transferred to Italy, the Italian and Austrian judicial authorities respectively shall until the coming into force of a special convention on this subject be authorized to correspond with each other direct. Requests thus presented shall be given effect to so far as the laws of a public character allow in the country to the authorities of which the request is addressed.

(4) All appeals to the higher Austrian judicial and administrative authorities beyond the limits of the territory transferred to Italy against decisions of the administrative or judicial authorities of this territory shall be suspended. The records shall be submitted to the authorities against whose decision the appeal was entered. They must be transmitted to the competent Italian authorities without delay.

(5) All other questions as to jurisdiction, procedure or the administration of justice will be determined by a special convention between Italy and Austria.

SECTION II. SERB-CROAT-SLOVENE STATE.

Article 46.— Austria, in conformity with the action already taken by the Allied and Associated Powers recognizes the complete independence of the Serb-Croat-Slovene State.

Article 47.— Austria renounces so far as she is concerned in favour of the Serb-Croat-Slovene State all rights and title over the territories of the former Austro-Hungarian Monarchy situated outside the frontiers of Austria as laid down in Article 27 of Part II (Frontiers of Austria) and recognised by the present Treaty, or by any Treaties concluded for the purpose of Completing the present settlement, as forming part of the Serb-Croat-Slovene State.

Article 48.— A Commission consisting of seven members, five nominated by the Principal Allied and Associated Powers, one by the Serb-Croat-Slovene State, and one by Austria, shall be constituted within fifteen days from the coming into force of the present Treaty to trace on the spot the frontier line described in Article 27 (4) of Part II (Frontiers of Austria).

The decisions of the Commission will be taken by a majority and shall be binding on the parties concerned.

Article 49.— The inhabitants of the Klagenfurt area will be called upon, to the extent stated below, to indicate by a vote the State to which they wish the territory to belong.

The boundaries of the Klagenfurt area are as follows:

From point 871, about 10 kilometres to the east-north-east of Villach, southwards to a point on the Drave about 2 kilometres above St. Martin,

a line running approximately from north to south to be fixed on the ground;

thence in a north-westerly direction as far as a point about 1 kilometre south-east of the railway bridge on the eastern branch of the bend formed by the Drave about 6 kilometres to the east of Villach,

the course of the Drave;

thence in a south-westerly direction to point 1817 (Malestiger),

a line to be fixed on the ground passing through point 666 (Polana) and cutting the railway between Mallestig and Faak;

thence in an east-south-easterly direction, then north-west to point 1929 (Gushowa),

the watershed between the basins of the Drave to the north and the Save to the south;

thence north-east to point 1054 (Strojna),

a line to be fixed on the ground following in a general manner the western boundary of the basin of the Miess, passing through points 1558, 2124 and 1185;

thence north-east to point 1522 (Hühner Kogel),

a line to be fixed on the ground, crossing the Drave to the south of Lavamünd;

from the Hühner Kogel westwards to point 842. 1 kilometre west of Kasparstein,

a line to be fixed on the ground passing to the north of Lavamünd;

thence as far as point 1899 (Speikkogl),

the north-eastern administrative boundary of the district of Völkermarkt;

thence in a south-westerly direction and as far as the river Gurk,

the north-western administrative boundary of the district of Völkermarkt;

thence in a south-westerly direction as far as a point on the administrative boundary to the west of point 1075 (Steinbruch Kogel),

a line to be fixed on the ground, passing through point 1076;

thence in a westerly direction and as far as a point to be fixed near point 725, about 10 kilometres north-west of Klagenfurt,

the administrative boundary between the districts of St. Veit and Klagenfurt;

thence as far as point 871, which was the starting point of this description,

a line to be fixed on the ground, passing through points 815 (Freudenberg), 1045 (Gallinberg) and 1069 (Taubenbühel).

Article 50.— With a view to the organisation of a plebiscite, the Klagenfurt area will be divided into two zones, the first to the south and the second to the north of a transversal line of which the following is a description:

From the point where the western boundary of the area leaves the Drave in a northerly direction as far as the point about 1 kilometre to the east of Rosegg (Saint-Michael),

the course of the Drave downstream;

thence in a north-easterly direction and as far as the western extremity of the Wörther See, south of Velden. a line to be fixed on the ground;

thence in an easterly direction to the outlet of the Glanfurt from the lake,

the median line of that lake;

thence eastwards to its confluence with the river Glan,

the course of the Glanfurt downstream;

thence eastward to its confluence with the river Gurk,

the course of the Glan downstream;

thence in a north-easterly direction, to the point where the northern boundary of the Klagenfurt area crosses the river Gurk.

the course of the Gurk.

The Klagenfurt area will be placed under the control of a Commission entrusted with the duty of preparing the plebiscite in that area and assuring the impartial

administration thereof. This Commission will be composed as follows: four members nominated respectively by the United States, Great Britain, France and Italy, one by Austria, one by the Serb-Croat-Slovene State, the Austrian member only taking part in the deliberations of the Commission in regard to the second zone, and the Serb-Croat-Slovene member only taking part therein with regard to the first zone. The decisions of the Commission will be taken by a majority.

The second zone will be occupied by the Austrian troops and administered in accordance with the general regulations of the Austrian legislation.

The first zone will be occupied by the troops of the Serb-Croat-Slovene State and administered in accordance with the general regulations of the legislation of that State.

In both zones the troops, whether Austrian or Serb-Croat-Slovene, shall be reduced to the numbers which the Commission may consider necessary for the preservation of order, and shall carry out their mission under the control of the Commission. These troops shall be replaced as speedily as possible by a police force recruited on the spot.

The Commission will be charged with the duty of arranging for the vote and of taking such measures as it may deem necessary to ensure its freedom, fairness and secrecy.

In the first zone the plebiscite will be held within three months from the coming into force of the present Treaty, at a date fixed by the Commission.

If the vote is in favour of the Serb-Croat-Slovene State, a plebiscite will be held in the second zone within three weeks from the proclamation of the result of the plebiscite in the first zone, at a date to be fixed by the Commission.

If on the other hand the vote in the first zone is in favour of Austria, no plebiscite will be held in the second zone, and the whole of the area will remain definitely under Austrian sovereignty.

The right of voting will be granted to every person without distinction of sex who:

(a) Has attained the age of 20 years on or before January 1, 1919;

(b) Has on January 1, 1919, his or her habitual residence within the zone subjected to the plebiscite; and,

(c) Was born within the said zone, or has had his or her habitual residence or rights of citizenship (*pertinenza*) there from a date previous to January 1, 1912.

The result of the vote will be determined by the majority of votes in the whole of each zone.

On the conclusion of each vote the result will be communicated by the Commission to the Principal Allied and Associated Powers; with a full report as to the taking of the vote, and will be proclaimed.

If the vote is in favour of the incorporation either of the first zone or of both zones in the Serb-Croat-Slovene State, Austria hereby renounces, so far as she is concerned and to the extent corresponding to the result of the vote, in favour of the Serb-Croat-Slovene State all rights and title over these territories.

After agreement with the Commission the Serb-Croat-Slovene Government may definitely establish its authority over the said territories.

If the vote in the first or second zone is in favour of Austria, the Austrian Government, after agreement with the Commission, will be entitled definitively to re-establish its authority over the whole of the Klagenfurt area, or in the second zone, as the case may be.

When the administration of the country, either by the Serb-Croat-Slovene State, or by Austria, as the case may be, has been thus assured, the powers of the Commission will terminate.

Expenditure by the Commission will be borne by Austria and the Serb-Croat-Slovene State in equal moieties.

Article 51.— The Serb-Croat-Slovene State accepts and agrees to embody in a Treaty with the Principal Allied and Associated Powers such provisions as may be deemed necessary by these Powers to protect the interests of inhabitants of that State who differ from the majority of the population in race, language, or religion.

The Serb-Croat-Slovene State further accepts and agrees to embody in a Treaty with the Principal Allied and Associated Powers such provisions as these Powers may deem necessary to protect freedom of transit and equitable treatment of the commerce of other nations.

Article 52.— The proportion and nature of the financial obligations of the former Austrian Empire which the Serb-Croat-Slovene State will have to assume on account of the territory placed under its sovereignty will be determined in accordance with Article 203 of Part IX (Financial Clauses) of the present Treaty.

Subsequent agreements will decide all questions which are not decided by the present Treaty and which may arise in consequence of the cession of the said territory.

SECTION III.— CZECHO-SLOVAK STATE.

Article 53.— Austria, in conformity with the action already taken by the Allied and Associated Powers, recognizes the complete independence of the Czecho-Slovak State, which will include the autonomous territory of the Ruthenians to the south of the Carpathians.

Article 54.— Austria renounces so far as she is concerned in favour of the Czecho-Slovak State all rights and title over the territories of the former Austro-Hungarian Monarchy situated outside the frontiers of Austria as laid down in Article 27 of Part II (Frontiers of Austria) and recognized in accordance with the present Treaty as forming part of the Czecho-Slovak State.

Article 55.— A Commission composed of seven members, five nominated by the Principal Allied and Associated Powers, one by the Czecho-Slovak State, and one by Austria, will be appointed fifteen days after the coming into force of the present Treaty to trace on the spot the frontier line laid down in Article 27 (6) of Part II (Frontiers of Austria) of the present Treaty.

The decisions of this Commission will be taken by a majority and shall be binding on the parties concerned.

Article 56.— The Czecho-Slovak State undertakes not to erect any military works in that portion of its territory which lies on the right bank of the Danube to the south of Bratislava (Pressburg).

Article 57.— The Czecho-Slovak State accepts and agrees to embody in a Treaty with the Principal Allied and Associated Powers such provisions as may be deemed necessary by these Powers to protect the interests of inhabitants of that State who differ from the majority of the population in race, language or religion.

The Czecho-Slovak State further accepts and agrees to embody in a Treaty with the Principal Allied and Associated Powers such provisions as these Powers may deem necessary to protect freedom of transit and equitable treatment for the commerce of other nations.

Article 58.— The proportion and nature of the financial obligations of the former Austrian Empire which the Czecho-Slovak State will have to assume on account of the territory placed under its sovereignty will be determined in accordance with Article 203 of Part IX (Financial Clauses) of the present Treaty.

Subsequent agreements will decide all questions which are not decided by the present Treaty and which may arise in consequence of the cession of the said territory.

SECTION IV.— ROUMANIA.

Article 59.— Austria renounces, so far as she is concerned, in favour of Romania all rights and title over such portion of the former Duchy of Bukovina as lies within the frontiers of Roumania which may ultimately be fixed by the Principal Allied and Associated Powers.

Article 60.— Roumania accepts and agrees to embody in a Treaty with the Principal Allied and Associated Powers such provisions as may be deemed necessary by these Powers to protect the interests of inhabitants of that State who differ from the majority of the population in race, language or religion.

Roumania further accepts and agrees to embody in a Treaty with the Principal Allied and Associated Powers such provisions as these Powers may deem necessary to protect freedom of transit and equitable treatment for the commerce of other nations.

Article 61.— The proportion and nature of the financial obligations of the former Austrian Empire which Roumania will have to assume on account of the territory placed under her sovereignty will be determined in accordance with Article 203 of Part IX (Financial Clauses) of the present Treaty.

Subsequent agreements will decide all questions which are not decided by the present Treaty and which may arise in consequence of the cession of the said territory.

SECTION V.— PROTECTION OF MINORITIES.

Article 62.— Austria undertakes that the stipulations contained in this Section shall be recognised as fundamental laws, and that no law, regulation or official action shall conflict or interfere with these stipulations, nor shall any law, regulation or official action prevail over them.

Article 63.— Austria undertakes to assure full and complete protection of life and liberty to all inhabitants of Austria without distinction of birth, nationality, language, race or religion.

All inhabitants of Austria shall be entitled to the free exercise, whether public or private, of any creed, religion or belief, whose practices are not inconsistent with public order or public morals.

Article 64.— Austria admits and declares to be Austrian nationals *ipso facto* and without the requirement of any formality all persons possessing at the date of the coming into force of the present Treaty rights of citizenship (*pertinenza*) within Austrian territory who are not nationals of any other State.

Article 65.— All persons born in Austrian territory who are not born nationals of another State shall *ipso facto* become Austrian nationals.

Article 66.— All Austrian nationals shall be equal before the law and shall enjoy the same civil and political rights without distinction as to race, language or religion.

Differences of religion, creed or confession shall not prejudice any Austrian national in matters relating to the enjoyment of civil or political rights, as for instance admission to public employments, functions and honours, or the exercise of professions and industries.

No restriction shall be imposed on the free use by any Austrian national of any language in private intercourse, in commerce, in religion, in the press or in publications of any kind, or at public meetings.

Notwithstanding any establishment by the Austrian Government of an official language, adequate facilities shall be given to Austrian nationals of non-German speech for the use of their language, either orally or in writing, before the courts.

Article 67.— Austrian nationals who belong to racial, religious or linguistic minorities shall enjoy the same treatment and security in law and in fact as the other Austrian nationals. In particular they shall have an equal right to establish, manage and control at their own expense charitable, religious and social institutions, schools and other educational establishments, with the right to use their own language and to exercise their religion freely therein.

Article 68.— Austria will provide in the public educational system in towns and districts in which a considerable proportion of Austrian nationals of other than German speech are residents adequate facilities for ensuring that in the primary schools the instruction shall be given to the children of such Austrian nationals through the medium of their own language. This provision shall not prevent the Austrian Government from making the teaching of the German language obligatory in the said schools.

In towns and districts where there is a considerable proportion of Austrian nationals belonging to racial, religious or linguistic minorities, these minorities shall be assured an equitable share in the enjoyment and application of the sums which may be provided out of public funds under the State, municipal or other budgets for educational, religious or charitable purposes.

Article 69.— Austria agrees that the stipulations in the foregoing Articles of this Section, so far as they affect persons belonging to racial, religious or linguistic minorities, constitute obligations of international concern and shall be placed under the guarantee of the League of Nations. They shall not be modified without the assent of a majority of the Council of the League of Nations. The Allied and Associated Powers represented on the council severally agree not to withold their assent from any modification in these Articles which is in due form assented to by a majority of the Council of the League of Nations.

Austria agrees that any Member of the Council of the League of Nations shall have the right to bring to the attention of the Council any infraction, or any danger of infraction, of any of these obligations, and that the Council may thereupon take such action and give such direction as it may deem proper and effective in the circumstances.

Austria further agrees that any difference of opinion as to questions of law or fact arising out of these Articles between the Austrian Government and any one of the Principal Allied and Associated Powers or any other Power, a Member of the Council of the League of Nations, shall be held to be a dispute of an international character under Article 14 of the Covenant of the League of Nations. The Austrian Government hereby consents that any such dispute shall, if the other party thereto demands, be referred to the Permanent Court of International Justice. The decision of the Permanent Court shall be final and shall have the same force and effect as an award under Article 13 of the Covenant.

SECTION VI.— CLAUSES RELATING TO NATIONALITY.

Article 70.— Every person possessing rights of citizenship (*pertinenza*) in territory which formed part of the territories of the former Austro-Hungarian Monarchy shall obtain *ipso facto* to the exclusion of Austrian nationality the nationality of the State exercising sovereignty over such territory.

Article 71.— Notwithstanding the provisions of Article 70, Italian nationality shall not, in the case of territory transferred to Italy, be acquired *ipso facto*;

(1) by persons possessing rights of citizenship in such territory who were not born there;

(2) by persons who acquired their rights of citizenship in such territory after May 24, 1915, or who acquired them only by reason of their official position.

Article 72.— The persons referred to in Article 71, as well as those who (*a*) formerly possessed rights of citizenship in the territories transferred to Italy, or whose father, or mother if the father is unknown, possessed rights of citizenship in such territories, or (*b*) have served in the Italian Army during the present war, and their descendants, may claim Italian nationality subject to the conditions prescribed in Article 78 for the right of option.

Article 73.— The claim to Italian nationality by the persons referred to in Article 72 may in individual cases be refused by the competent Italian authority.

Article 74.— Where the claim to Italian nationality under Article 72 is not made, or is refused, the persons concerned will obtain *ipso facto* the nationality of the State exercising sovereignty over the territory in which they possessed rights of citizenship before acquiring such rights in the territory transferred to Italy.

Article 75.— Juridical persons established in the territories transferred to Italy shall be considered Italian if they are recognized as such either by the Italian administrative authorities or by an Italian judicial decision.

Article 76.— Notwithstanding the provisions of Article 70, persons who acquired rights of citizenship after January 1, 1910, in territory transferred under the present Treaty to the Serb-Croat-Slovene State, or to the Czecho-Slovak State, will not acquire Serb-Croat-Slovene or Czecho-Slovak nationality without a permit from the Serb-Croat-Slovene State or the Czecho-Slovak State respectively.

Article 77.— If the permit referred to in Article 76 is not applied for, or is refused, the persons concerned will obtain *ipso facto* the nationality of the State exercising sovereignty over the territory in which they previously possessed rights of citizenship.

Article 78.— Persons over 18 years of age losing their Austrian nationality and obtaining *ipso facto* a new nationality under Article 70 shall be entitled within a period of one year from the coming into force of the present Treaty to opt for the nationality of the State in whirh they possessed rights of citizenship before acquiring such rights in the territory transferred.

Option by a husband will cover his wife and option by parents will cover their children under 18 years of age.

Persons who have exercised the above right to opt must within the succeeding twelve months transfer their place of residence to the State for which they have opted.

They will be entitled to retain their immovable property in the territory of the other State where they had their place of residence before exercising their right to opt.

They may carry with them their movable property of every description. No export or import duties may be imposed upon them in connection with the removal of such property.

Article 79.— Persons entitled to vote in plebiscites provided for in the present Treaty shall within a period of six months after the definitive attribution of the area in which the plebiscite has taken place be entitled to opt for the nationality of the State to which the area is not assigned.

The provisions of Article 78 relating to the right of option shall apply equally to the exercise of the right under this Article.

Article 80.— Persons possessing rights of citizenship in territory forming part of the former Austro-Hungarian Monarchy, and differing in race and language from the majority of the population of such territory, shall within six months of the coming into force of the present Treaty severally be entitled to opt for Austria, Italy, Poland, Roumania, the Serb-Croat-Slovene State, or the Czecho-Slovak State, if the majority of the population of the State selected is of the same race and language as the person exercising the right to opt. The provisions of Article 78 as to the exercise of the right of option shall apply to the right of option given by this Article.

Article 81.— The High Contracting Parties undertake to put no hindrance in the way of the exercise of the right which the persons concerned have under the present Treaty, or under treaties concluded by the Allied and Associated Powers with Germany, Hungary or Russia, or between any of the Allied and Associated

Powers themselves, to choose any other nationality which may be open to them.

Article 82.— For the purposes of the provisions of this Section, the status of a married woman will be governed by that of her husband, and the status of children under 18 years of age by that of their parents.

SECTION VII.— POLITICAL CLAUSES RELATING TO CERTAIN EUROPEAN STATES.

1. Belgium.

Article 83.— Austria, recognizing that the Treaties of April 19, 1839, which established the status of Belgium before the war, no longer conform to the requirements of the situation, consents so far as she is concerned to the abrogation of the said treaties and undertakes immediately to recognize and to observe whatever conventions may be entered into by the Principal Allied and Associated Powers, or by any of them, in concert with the Governments of Belgium and of the Netherlands, to replace the said Treaties of 1839. If her formal adhesion should be required to such conventions or to any of their stipulations, Austria undertakes immediately to give it.

2. Luxemburg.

Article 84.— Austria agrees, so far as she is concerned, to the termination of the régime of neutrality of the Grand Duchy of Luxemburg, and accepts in advance all international arrangements which may be concluded by the Allied and Associated Powers relating to the Grand Duchy.

3. Schleswig.

Article 85.— Austria hereby accepts so far as she is concerned all arrangements made by the Allied and Associated Powers with Germany concerning the territories whose abandonment was imposed upon Denmark by the Treaty of October 30, 1864.

4. Turkey and Bulgaria.

Article 86.— Austria undertakes to recognize and accept as far as she is concerned all arrangements which the Allied and Associated Powers may make with Turkey and with Bulgaria with reference to any rights, interests and privileges whatever which might be claimed by Austria or her nationals in Turkey or Bulgaria and which are not dealt with in the provisions of the present Treaty.

5. Russia and Russian States.

Article 87.— 1. Austria acknowledges and agrees to respect as permanent and inalienable the independence of all the territories which were part of the former Russian Empire on August 1, 1914.

In accordance with the provisions of Article 210 of Part IX (Financial Clauses) and Article 244 of Part X (Economic Clauses) of the present Treaty, Austria accepts definitely so far as she is concerned the abrogation of the Brest-Litovsk Treaties and of all treaties, conventions and agreements entered into by the former Austro-Hungarian Government with the Maximalist Government in Russia.

The Allied and Associated Powers formally reserve the rights of Russia to obtain from Austria restitution and reparation based on the principles of the present Treaty.

2. Austria undertakes to recognize the full force of all treaties or agreements which may be entered into by the Allied and Associated Powers with States now existing or coming into existence in future in the whole or part of the former Empire of Russia as it existed on August 1, 1914, and to recognize the frontiers of any such States as determined therein.

SECTION VIII.— GENERAL PROVISIONS.

Article 88.— The independence of Austria is inalienable otherwise than with the consent of the Council of the League of Nations. Consequently Austria undertakes in the absence of the consent of the said Council to abstain from any act which might directly or indirectly or by any means whatever compromise her independence, particularly, and until her admission to membership of the League of Nations, by participation in the affairs of another Power.

Article 89.— Austria hereby recognises and accepts the frontiers of Bulgaria, Greece, Hungary, Poland, Roumania, the Serb-Croat-Slovene State and the Czecho-Slovak State as these frontiers may be determined by the Principal Allied and Associated Powers.

Article 90.— Austria undertakes to recognise the full force of the Treaties of Peace and Additional Conventions which have been or may be concluded by the Allied and Associated Powers with the Powers who fought on the side of the former Austro-Hungarian Monarchy, and to recognise whatever dispositions have been or may be made concerning the territories of the former German Empire, of Hungary, of the Kingdom of Bulgaria and of the Ottoman Empire, and to recognize the new States within their frontiers as there laid down.

Article 91.— Austria renounces so far as she is concerned in favour of the Principal Allied and Associated Powers all rights and title over the territories which previously belonged to the former Austro-Hungarian Monarchy and which, being situated outside the new frontiers of Austria as described in Article 27 of Part II (Frontiers of Austria), have not at present been assigned to any State.

Austria undertakes to accept the settlement made by the Principal Allied and Associated Powers in regard to those territories, particularly in so far as concerns the nationality of the inhabitants.

Article 92.— No inhabitant of the territories of the former Austro-Hungarian Monarchy shall be disturbed or molested on account either of his political attitude between July 28, 1914, and the definitive settlement of the sovereignty over these territories, or of the determination of his nationality effected by the present Treaty.

Article 93.— Austria will hand without delay to the Allied and Associated Governments concerned archives, registers, plans, title-deeds and documents of every kind belonging to the civil, military, financial, judicial or other forms of administration in the ceded territories. If any one of these documents, archives, registers, title-deeds or plans is missing, it shall be restored by Austria upon the demand of the Allied or Associated Government concerned.

In case the archives, registers, plans, title-deeds or documents referred to in the preceding paragraphs, exclusive of those of a military character, concern equally the administrations in Austria, and cannot therefore be handed over without inconvenience to such administrations, Austria undertakes, subject to reciprocity, to give access thereto to the Allied and Associated Governments concerned.

Article 94.— Separate conventions between Austria and each of the States to which territory of the former Austrian Empire is transferred, and each of the States arising from the dismemberment of the former Austro-Hungarian Monarchy, will provide for the interests of the inhabitants, especially in connection with their civil rights, their commerce and the exercise of their professions.

PART IV.—AUSTRIAN INTERESTS OUTSIDE EUROPE.

Article 95.— In territory outside her frontiers as fixed by the present Treaty Austria renounces so far as she is concerned all rights, titles and privileges whatever in or over territory outside Europe which belonged to the former Austro-Hungarian Monarchy, or to its allies, and all rights, titles and privileges whatever their origin which it held as against the Allied and Associated Powers.

Austria undertakes immediately to recognise and to conform to the measures which may be taken now or in the future by the Principal Allied and Associated Powers, in agreement where necessary with third Powers, in order to carry the above stipulation into effect.

SECTION I.— MOROCCO.

Articles 96–101 identical with Articles 141–146 inclusive of German Treaty, with the exception of the substitution of the words Austria, Austrian, etc., for Germany, German, etc.

SECTION II.— EGYPT.

Articles 102–109 identical with Articles 147–154 of German Treaty with the exception of the substitution of the words Austria, Austrian, etc., for Germany, German, etc.

SECTION III.— SIAM.

Articles 110, 111, 112 identical with Articles 135, 136 and 137 of the German Treaty with the exception of the substitution of the words Austria, Austria-Hungary, Austrian, etc., for Germany, German Government, etc.

SECTION IV.— CHINA.

Article 113.— Austria renounces, so far as she is concerned, in favour of China all benefits and privileges resulting from the provisions of the final Protocol signed at Peking on September 7, 1901, and from all annexes,

notes and documents supplementary thereto. She likewise renounces in favour of China any claim to indemnities accruing thereunder subsequent to August 14, 1917.

Article 114.—From the coming into force of the present Treaty the High Contracting Parties shall apply, in so far as concerns them respectively:

(1) The Arrangement of August 29, 1902, regarding the new Chinese customs tariff;

(2) The Arrangement of September 27, 1905, regarding Whang-Poo, and the provisional supplementary Arrangement of April 4, 1912.

China, however, will not be bound to grant to Austria the advantages or privileges which she allowed to the former Austro-Hungarian Monarchy under these Arrangements.

Article 115.— Austria, so far as she is concerned, cedes to China all her rights over the buildings, wharves and pontoons, barracks, forts, arms and munitions of war, vessels of all kinds, wireless telegraphy installations and other public property which belonged to the former Austro-Hungarian Monarchy, and which are situated or may be in the Austro-Hungarian Concession at Tientsin or elsewhere in Chinese territory.

It is understood, however, that premises used as diplomatic or consular residences or offices, as well as the effects and furniture contained therein, are not included in the above cession, and, furthermore, that no steps shall be taken by the Chinese Government to dispose of the public and private property belonging to the former Austro-Hungarian Monarchy situated within the so-called Legation Quarter at Peking without the consent of the Diplomatic Representatives of the Powers which, on the coming into force of the present Treaty, remain parties to the Final Protocol of September 7, 1901.

Article 116.— Austria agrees so far as she is concerned to the abrogation of the leases from the Chinese Government under which the Austro-Hungarian Concession at Tientsin is now held.

China, restored to the full exercise of her sovereign rights in the above area, declares her intention of opening it to international residence and trade. She further declares that the abrogation of the leases under which the said concession is now held shall not affect the property rights of nationals of Allied and Associated Powers who are holders of lots in this concession.

Article 117.— Austria waives all claims against the Chinese Government or against any Allied or Associated Government arising out of the internment of Austrian nationals in China and their repatriation. She equally renounces, so far as she is concerned, all claims arising out of the capture and condemnation of Austro-Hungarian ships in China, or the liquidation, sequestration or control of Austrian properties, rights and interests in that country since August 14, 1917. This provision, however, shall not affect the rights of the parties interested in the proceeds of any such liquidation, which shall be governed by the provisions of Part X (Economic Clauses) of the present Treaty.

PART V.— MILITARY, NAVAL AND AIR CLAUSES.

In order to render possible the initiation of a general limitation of the armaments of all nations, Austria undertakes strictly to observe the military, naval and air clauses which follow.

SECTION I.— MILITARY CLAUSES.

Chapter I.—General.

Article 118.— Within three months of the coming into force of the present Treaty, the military forces of Austria shall be demobilised to the extent prescribed hereinafter.

Article 119.— Universal compulsory military service shall be abolished in Austria. The Austrian Army shall in future only be constituted and recruited by means of voluntary enlistment.

Chapter II.—Effectives and Cadres of the Austrian Army.

Article 120.— The total number of military forces in the Austrian Army shall not exceed 30,000 men, including officers and depot troops.

Subject to the following limitations, the formations composing the Austrian Army shall be fixed in accordance with the wishes of Austria:

(1) The effectives of units must be fixed between the maximum and minimum figures shown in Table IV annexed to this Section.

(2) The proportion of officers, including the personnel of staffs and special services, shall not exceed one twentieth of the total effectives with the colours, and that of non-commissioned officers shall not exceed one fifteenth of the total effectives with the colours.

(3) The number of machine guns, guns and howitzers shall not exceed per thousand men of the total effectives with the colours those fixed in Table V annexed to this Section.

The Austrian Army shall be devoted exclusively to the maintenance of order within the territory of Austria, and to the control of her frontiers.

Article 121.— The maximum strength of the Staffs and of all formations which Austria may be permitted to raise are given in the Tables annexed to this Section; these figures need not be exactly followed, but must not be exceeded.

All other organisations for the command of troops or for preparation for war are forbidden.

Article 122.— All measures of mobilisation, or appertaining to mobilisation, are forbidden.

In no case must formations, administrative services or staffs include supplementary cadres.

The carrying out of any preparatory measures with a view to requisitioning animals or other means of military transport is forbidden.

Article 123.— The number of gendarmes, customs officers, foresters, members of the local or municipal police or other like officials may not exceed the number of men employed in a similar capacity in 1913 within the boundaries of Austria as fixed by the present Treaty.

The number of these officials shall not be increased in the future except as may be necessary to maintain the same proportion between the number of officials and the total population in the localities or municipalities which employ them.

These officials, as well as officials employed in the railway service, must not be assembled for the purpose of taking part in any military exercises.

Article 124.— Every formation of troops not included in the Tables annexed to this Section is forbidden. Such other formations as may exist in excess of the 30,000 effectives authorised shall be suppressed within the period laid down by Article 118.

Chapter III.—Recruiting and Military Training.

Article 125.— All officers must be regulars (officers *de carriere*). Officers now serving who are retained in the Army must undertake the obligation to serve in it up to the age of 40 years at least. Officers now serving who do not join the new army will be released from all military obligations; they must not take part in any military exercises, whether theoretical or practical.

Officers newly appointed must undertake to serve on the active list for 20 consecutive years at least.

The number of officers discharged for any reason before the expiration of their term of service must not exceed in any year one twentieth of the total of officers provided for in Article 120. If this proportion is unavoidably exceeded the resulting shortage must not be made good by fresh appointments.

Article 126.— The period of enlistment for non-commissioned officers and privates must be for a total period of not less than 12 consecutive years, including at least 6 years with the colours.

The proportion of men discharged before the expiration of the period of their enlistment for reasons of health or as a result of disciplinary measures or for any other reasons must not in any year exceed one twentieth of the total strength fixed by Article 120. If this proportion is unavoidably exceeded, the resulting shortage must not be made good by fresh enlistments.

Chapter IV.—Schools. Educational Establishments, Military Clubs and Societies.

Article 127.— The number of students admitted to attend the courses in military schools shall be strictly in proportion to the vacancies to be filled in the cadres of officers. The students and the cadres shall be included in the effectives fixed by Article 120 of the present Section.

Consequently all military schools not required for this purpose shall be abolished.

Article 128.— Educational establishments, other than those referred to in Article 127, as well as all sporting and other clubs, must not occupy themselves with any military matters.

Chapter V.—Armament, Munitions and Material. Fortifications.

Article 129.— On the expiration of three months from the coming into force of the present Treaty, the armament of the Austrian Army shall not exceed the figures fixed per thousand men in Table V annexed to

this Section. Any excess in relation to effectives shall only be used for such replacements as may eventually be necessary.

Article 130.— The stock of munitions at the disposal of the Austrian Army shall not exceed the amounts fixed in Table V annexed to this Section.

Within three months from the coming into force of the present Treaty the Austrian Government shall deposit any existing surplus of armament and munitions in such places as shall be notified to it by the Principal Allied and Associated Powers.

No other stock, depot or reserve of munitions shall be formed.

Article 131.— The number and calibre of guns constituting the fixed normal armament of fortified places existing at the present moment in Austria shall be immediately notified to the Principal Allied and Associated Powers, and will constitute maximum amounts which must not be exceeded.

Within three months of the coming into force of the present Treaty the maximum stock of ammunition for these guns shall be reduced to and maintained at the following uniform rates:

1500 rounds per gun for those the calibre of which is 105 mm. and under;

500 rounds per gun for those of higher calibre.

Article 132.— The manufacture of arms, munitions and war material shall only be carried on in one single factory, which shall be controlled by and belong to the State, and whose output shall be strictly limited to the manufacture of such arms, munitions and war material as is necessary for the military forces and armaments referred to in Articles 120, 123, 129, 130 and 131.

The manufacture of sporting weapons is not forbidden, provided that sporting weapons manufactured in Austria taking ball cartridge are not of the same calibre as that of military weapons used in any European army.

Within three months from the coming into force of the present Treaty all other establishments for the manufacture, preparation, storage or design of arms, munitions or any other war material shall be closed down or converted to purely commercial uses.

Within the same length of time, all arsenals shall also be closed down, except those to be used as depots for the authorised stocks of munitions, and their staffs discharged.

The plant of any establishments or arsenals in excess of the amount required for the manufacture authorised shall be rendered useless or converted to purely commercial purposes in accordance with the decisions of the Military Inter-Allied Commission of Control referred to in Article 153.

Article 133.— Within three months from the coming into force of the present Treaty, all arms, munitions and war material, including any kind of anti-aircraft material, of whatever origin, existing in Austria in excess of the quantity authorised shall be handed over to the Principal Allied and Associated Powers.

Delivery shall take place at such points in Austrian territory as may be appointed by the said Powers, who shall also decide on the disposal of such material.

Article 134.— The importation into Austria of arms, munitions and war material of all kinds is strictly forbidden.

The manufacture for foreign countries and the exportation of arms, munitions and war material shall also be forbidden.

Article 135.— The use of flame throwers, asphyxiating, poisonous or other gases, and all similar liquids, materials or devices being prohibited, their manufacture and importation are strictly forbidden in Austria.

Material specially intended for the manufacture, storage or use of the said products or devices is equally forbidden.

The manufacture and importation into Austria of armoured cars, tanks or any similar machines suitable for use in war are equally forbidden.

TABLE I.— COMPOSITION AND MAXIMUM EFFECTIVES OF AN INFANTRY DIVISION.

UNITS	Maximum effectives of each unit	
	Officers	Men
Headquarters of an Infantry Division	25	70
Headquarters of Divisional Infantry	5	50
Headquarters of Divisional Artillery	4	30
3 Regiments of Infantry [1] (on the basis of 65 officers and 2,000 men per regiment)	195	6,000
1 Squadron	6	160
1 Battalion of Trench Artillery (3 Companies)	14	500
1 Battalion of Pioneers [2] (3 Companies)	14	500
Regiment Field Artillery [3]	80	1,200
1 Battalion Cyclists (comprising 3 Companies)	18	450
1 Signal Detachment [4]	11	330
Divisional medical corps	28	550
Divisional parks and trains	14	940
Total for an Infantry Division	414	10,780

[1] Each Regiment comprises 3 Battalions of infantry. Each Battalion comprises 3 Companies of infantry and 1 Machine-gun Company.

[2] Each Battalion comprises 1 Headquarters, 2 Pioneer Companies, 1 Bridging Section, 1 Searchlight Section.

[3] Each Regiment comprises 1 Headquarters, 3 Groups of Field or Mountain Artillery, comprising 8 Batteries; each Battery comprising 4 guns or howitzers (field or mountain).

[4] This Detachment comprises: telephone detachment, 1 listening section, 1 carrier pigeon section.

TABLE II.— COMPOSITION AND MAXIMUM EFFECTIVES FOR A CAVALRY DIVISION.

UNITS	Maximum number authorised	Maximum effectives of each unit	
		Officers	Men
Headquarters of a Cavalry Division	1	15	50
Regiment of Cavalry [1]	6	30	720
Group of Field Artillery (3 Batteries)	1	30	430
Group of motor machine-guns and armoured cars [2]	1	4	80
Miscellaneous services		30	500
Total for a Cavalry Division	.....	259	5,380

[1] Each Regiment comprises 4 Squadrons.

[2] Each group comprises 9 fighting cars, each carrying one gun, 1 machine gun, and 1 spare machine gun, 4 communication cars, 2 small lorries for stores, 7 lorries, including 1 repair lorry, 4 motor cars.

NOTE.— The large Cavalry Units may include a variable number of regiments and be divided into independent brigades within the limit of the effectives laid down above.

TABLE III.— COMPOSITION AND MAXIMUM EFFECTIVES FOR A MIXED BRIGADE.

UNITS	Maximum effectives of each unit	
	Officers	Men
Headquarters of a Brigade	10	50
2 Regiments of Infantry [1]	130	4,000
1 Cyclist Battalion	18	450
1 Cavalry Squadron	5	100
1 Group Field Artillery	20	400
1 Trench Mortar Company	5	150
Miscellaneous services	10	200
Total for Mixed Brigade	198	5,350

[1] Each Regiment comprises 3 Battalions of Infantry. Each Battalion comprises 3 Companies of Infantry and 1 Machine-gun Company.

TABLE IV.— MINIMUM EFFECTIVES OF UNITS WHATEVER ORGANISATION IS ADOPTED IN THE ARMY.

(Divisions, mixed brigades, etc.)

UNITS	Maximum effectives (for reference)		Minimum effectives	
	Officers	Men	Officers	Men
Infantry Division	414	10,780	300	8,000
Cavalry Division	259	5,380	180	3,650
Mixed Brigade	198	5,350	140	4,250
Regiment of Infantry	65	2,000	52	1,600
Battalion of Infantry	16	650	12	500
Company of Infantry or Machine-guns	3	160	2	120
Cyclist Group	18	450	12	300
Regiment of Cavalry	30	720	20	450
Squadron of Cavalry	6	160	3	100
Regiment of Field Artillery	80	1,200	60	1,000
Battery of Field Artillery.	4	150	2	120
Company of Trench Mortars	3	150	2	100
Battalion of Pioneers	14	500	8	300
Battery of Mountain Artillery	5	320	3	200

TABLE V.— MAXIMUM AUTHORIZED ARMAMENTS AND MUNITION SUPPLIES.

MATERIAL	Quantity for 1,000 men	Amount of munitions per arm (rifles, guns, etc.).
		Rounds
Rifles or Carbines	1,500	500
Machine guns, heavy or light	15	10,000
Trench Mortars, light	2	1,000
Trench Mortars, medium		500
Guns or howitzers (field or mountain)	3	1,000

(1) Automatic rifles or carbines are counted as light machine guns.

NOTE.— No heavy gun, i.e. of a calibre greater than 105 mm. is authorized, with the exception of the normal armament of fortified places.

SECTION II.— NAVAL CLAUSES.

Article 136.— From the date of the coming into force of the present Treaty all Austro-Hungarian warships, submarines included, are declared to be finally surrendered to the Principal Allied and Associated Powers.

All the monitors, torpedo boats and armed vessels of the Danube Flotilla will be surrendered to the Principal Allied and Associated Powers.

Austria will, however, have the right to maintain on the Danube for the use of the river police three patrol boats to be selected by the Commission referred to in Article 154 of the present Treaty.

Article 137.— The Austro-Hungarian auxiliary cruisers and fleet auxiliaries enumerated below will be disarmed and treated as merchant ships:

Bosnia.
Gablons.
Cerohna.
Africa.
Tirol.
Argentina.
Lussin.
Teodo.
Pelikan.
Herkules.
Pola.
Najade.
Pluto.
President Wilson (ex-Kaiser Franz Joseph).
Trieste.
Baron Bruck.
Nixe.
Gigante.
Dalmat.
Persia.
Prince Hohenlohe.
Gastein.
Helouan.
Graf Wurmbrand.
Elisabet.
Melcovich.
Baron Call.
Gaea.
Cyclop.
Vesta.
Nymphe.
Buffel.

Article 138.— All warships, including submarines, now under construction in Austrian ports, or in ports which previously belonged to the Austro-Hungarian Monarchy, shall be broken up.

The work of breaking up these vessels will be commenced as soon as possible after the coming into force of the present Treaty.

Article 139.— Articles, machinery and material arising from the breaking up of Austro-Hungarian warships of all kinds, whether surface vessels or submarines, may not be used except for purely industrial or commercial purposes.

They may not be sold or disposed of to foreign countries.

Article 140.— The construction or acquisition of any submarine, even for commercial purposes, shall be forbidden in Austria.

Article 141.— All arms, ammunition and other naval war material, including mines and torpedoes, which belonged to Austria-Hungary at the date of the signature of the Armistice of November 3, 1918, are declared to be finally surrendered to the Principal Allied and Associated Powers.

Article 142.— Austria is held responsible for the delivery (Articles 136 and 141), the disarmament (Article 137), the demolition (Article 138), as well as the disposal (Article 137) and the use (Article 139) of the objects mentioned in the preceding Articles only so far as these remain in her own territory.

Article 143.— During the three months following the coming into force of the present Treaty, the Austrian high-power wireless telegraphy station at Vienna shall not be used for the transmission of messages concerning naval, military or political questions of interest to Austria, or any State which has been allied to Austria-Hungary in the war, without the assent of Principal Allied and Associated Powers. This station may be used for commercial purposes, but only under the supervision of the said Powers, who will decide the wave-length to be used.

During the same period Austria shall not build any more high-power wireless telegraphy stations in her own territory or that of Hungary, Germany, Bulgaria or Turkey.

SECTION III.—AIR CLAUSES.

Article 144.— The armed forces of Austria must not include any military or naval air forces.

No dirigible shall be kept.

Article 145.— Within two months from the coming into force of the present Treaty, the personnel of the air forces on the rolls of the Austrian land and sea forces shall be demobilised.

Article 146.— Until the complete evacuation of Austrian territory by the Allied and Associated troops the aircraft of the Allied and Associated Powers shall enjoy in Austria freedom of passage through the air, freedom of transit and of landing.

Article 147.— During the six months following the coming into force of the present Treaty, the manufacture, importation and exportation of aircraft, parts of aircraft, engines for aircraft, and parts of engines for aircraft shall be forbidden in all Austrian territory.

Article 148.— On the coming into force of the present Treaty, all military and naval aeronautical material must be delivered by Austria and at her expense to the Principal Allied and Associated Powers.

Delivery must be effected at such places as the Governments of the said Powers may select, and must be completed within three months.

In particular, this material will include all items under the following heads which are or have been in use or were designed for warlike purposes.

Complete aeroplanes and seaplanes, as well as those being manufactured, repaired or assembled.

Dirigibles able to take the air, being manufactured, repaired or assembled.

Plant for the manufacture of hydrogen.

Dirigible sheds and shelters of every kind for aircraft.

Pending their delivery, dirigibles will at the expense of Austria, be maintained inflated with hydrogen; the plant for the manufacture of hydrogen, as well as the sheds for dirigibles, may, at the discretion of the said Powers, be left to Austria until the time when the dirigibles are handed over.

Engines for aircraft.

Nacelles and fuselages.

Armament (guns, machine guns, light machine guns, bomb-dropping apparatus, torpedo apparatus, synchronisation apparatus, aiming apparatus).

Munitions (cartridges, shell, bombs loaded or unloaded, stocks of explosives or of material for their manufacture).

Instruments for use on aircraft.

Wireless apparatus and photographic or cinematograph apparatus for use on aircraft.

Component parts of any of the items under the preceding heads.

The material referred to above shall not be removed without special permission from the said Governments.

SECTION IV.— INTER-ALLIED COMMISSIONS OF CONTROL.

Article 149.— All the Military, Naval and Air Clauses contained in the present Treaty for the execution of which a time limit is prescribed shall be executed by Austria under the control of Inter-Allied Commissions specially appointed for this purpose by the Principal Allied and Associated Powers.

The above-mentioned Commissions will represent the Governments of the Principal Allied and Associated Powers in dealing with the Austrian Government in all matters concerning the execution of the Military, Naval and Air Clauses. They will communicate to the Austrian authorities the decisions which the Principal Allied and Associated Powers have reserved the right to take or which the execution of the said Clauses may necessitate.

Article 150.— The Inter-Allied Commissions of Control may establish their organisations at Vienna and shall be entitled, as often as they think desirable, to proceed to any point whatever in Austrian territory, or to send a sub-commission, or to authorise one or more of their members to go, to any such point.

Article 151.— The Austrian Government must furnish to the Inter-Allied Commissions of Control all such information and documents as the latter may deem necessary to insure the execution of their mission, and all means (both in personnel and in material) which the above-mentioned Commissions may need to ensure the complete execution of the Military, Naval or Air Clauses.

The Austrian Government must attach a qualified representative to each Inter-Allied Commission of Control with the duty of receiving from the latter any communications which it may have to address to the Austrian Government, and furnishing it with, or procuring, all information or documents demanded.

Article 152.— The upkeep and cost of the Commissions of Control and the expense involved by their work shall be borne by Austria.

Article 153.— It will be the special duty of the Military Inter-Allied Commission of Control to receive from the Austrian Government the notifications relating to the location of the stocks and depots of munitions, the armament of the fortified works, fortresses and forts, and the location of the works or factories for the production of arms, munitions, and war material and their operations.

It will take delivery of the arms, munitions, war material and plant intended for war construction, will select the points where such delivery is to be effected, and will supervise the works of destruction, and rendering things useless, or of transformation of material which are to be carried out in accordance with the present Treaty.

Article 154.— It will be the special duty of the Naval Inter-Allied Commission of Control to proceed to the building yards and to supervise the breaking-up of the ships which are under construction there, to take delivery of arms, munitions and naval war material, and to supervise the destruction and breaking-up provided for.

The Austrian Government must furnish to the Naval Inter-Allied Commission of Control all such information and documents as the Commission may deem necessary to ensure the complete execution of the Naval Clauses, in particular the designs of the warships, the composition of their armaments, the details and models of the guns, munitions, torpedoes, mines, explosives, wireless telegraphic apparatus, and in general everything relating to naval war material, as well as all legislative or administrative documents or regulations.

Article 155.— It will be the special duty of the Aeronautical Inter-Allied Commission of Control to make an inventory of the aeronautical material which is actually in the possession of the Austrian Government, to inspect aeroplane, balloon and motor manufactories, and factories producing arms, munitions and explosives capable of being used by aircraft, to visit all aerodromes, sheds, landing grounds, parks and depots which are now in Austrian territory, and to authorise where necessary a removal of material and to take delivery of such material.

The Austrian Government must furnish to the Aeronautical Inter-Allied Commission of Control all such information and legislative, administrative or other documents which the Commission may consider necessary to ensure the complete execution of the Air Clauses, and, in particular, a list of the personnel belonging to all the air services of Austria and of the existing material, as well as of that in process of manufacture or on order, and a list of all establishments working for aviation, of their positions, and of all sheds and landing grounds.

SECTION V.— GENERAL ARTICLES.

Article 156.— After the expiration of a period of three months from the coming into force of the present Treaty, the Austrian laws must have been modified and shall be maintained by the Austrian Government in conformity with this Part of the present Treaty.

Within the same period all the administrative or other measures relating to the execution of this Part must have been taken by the Austrian Government.

Article 157.— The following portions of the Armistice of November 3, 1918: paragraphs 2 and 3 of Chapter I (Military Clauses), paragraphs 2, 3, 6 of Chapter I of the annexed Protocol (Military Clauses), remain in force so far as they are not inconsistent with the above stipulations.

Article 158.— Austria undertakes, from the coming into force of the present Treaty, not to accredit nor to send to any foreign country any military, naval or air mission, nor to allow any such mission to leave her territory; Austria further agrees to take the necessary measures to prevent Austrian nationals from leaving her territory to enlist in the Army, Navy or Air service of any foreign Power, or to be attached to such Army, Navy or Air service for the purpose of assisting in the military, naval or air training thereof, or generally for the purpose of giving military, naval or air instruction in any foreign country.

The Allied and Associated Powers undertake, so far as they are concerned, that from the coming into force of the present Treaty they will not enrol in nor attach to their armies or naval or air forces any Austrian national for the purpose of assisting in the military training of such armies or naval or air forces, or otherwise employ any such Austrian national as military, naval or aeronautic instructor.

The present provision does not, however, affect the right of France to recruit for the Foreign Legion in accordance with French military laws and regulations.

Article 159.— So long as the present Treaty remains in force, Austria undertakes to submit to any investigation which the Council of the League of Nations, acting if need be by a majority vote, may consider necessary.

PART VI.— PRISONERS OF WAR AND GRAVES.

SECTION I.—PRISONERS OF WAR.

Articles 160–170 are identical with Articles 214–224 of the German Treaty, with the exception of the substitution of the words Austria, Austrian, etc., for Germany, German, etc.

SECTION II.— GRAVES.

Articles 171 and 172 are identical with Articles 225 and 226 of the German Treaty with the exception of the substitution of the words Austria, Austrian Government, etc., for Germany, German Government, etc.

PART VII.— PENALTIES.

Article 173.— The Austrian Government recognises the right of the Allied and Associated Powers to bring before military tribunals persons accused of having committed acts in violation of the laws and customs of war. Such persons shall, if found guilty, be sentenced to punishments laid down by law. This provision will apply notwithstanding any proceedings or prosecutions before a tribunal in Austria or in the territory of her allies.

The Austrian Government shall hand over to the Allied and Associated Powers, or to such one of them as shall so request, all persons accused of having committed an act in violation of the laws and customs of war, who are specified either by name or by the rank, office or employment which they held under the Austrian authorities.

Article 174.— Persons guilty of criminal acts against the nationals of one of the Allied and Associated Powers will be brought before the military tribunals of that Power.

Persons guilty of criminal acts against the nationals of more than one of the Allied and Associated Powers will be brought before military tribunals composed of members of the military tribunals of the Powers concerned.

In every case the accused will be entitled to name his own counsel.

Article 175.— The Austrian Government undertakes to furnish all documents and information of every kind, the production of which may be considered necessary to ensure the full knowledge of the incriminating acts, the discovery of offenders and the just appreciation of responsibility.

Article 176.— The provisions of Articles 173 to 175 apply similarly to the Governments of the States to which territory belonging to the former Austro-Hungarian Monarchy has been assigned, in so far as concerns persons accused of having committed acts contrary to the laws and customs of war who are in the territory or at the disposal of the said States.

If the persons in question have acquired the nationality of one of the said States, the Government of such State undertakes to take, at the request of the Power concerned and in agreement with it, all the measures necessary to ensure the prosecution and punishment of such persons.

Article 177.— The Allied and Associated Governments affirm and Austria accepts the responsibility of Austria and her allies for causing the loss and damage to which the Allied and Associated Governments and their nationals have been subjected as a consequence of the war imposed upon them by the aggression of Austria-Hungary and her allies.

Article 178.— The Allied and Associated Governments recognise that the resources of Austria are not adequate, after taking into account the permanent diminutions of such resources which will result from other provisions of the present Treaty, to make complete reparation for such loss and damage.

The Allied and Associated Governments however require, and Austria undertakes, that she will make compensation as hereinafter determined for damage done to the civilian population of the Allied and Associated Powers and to their property during the period of the belligerency of each as an Allied and Associated Power against Austria by the said aggression by land, by sea and from the air, and in general damage as defined in Annex I hereto.

Article 179.— The amount of such damage for which compensation is to be made by Austria shall be determined by an Inter-Allied Commission to be called the *Reparation Commission* and constituted in the form and with the powers set forth hereunder and in Annexes Nos. II–V inclusive hereto. The Commission is the same as that provided for under Article 233 of the Treaty with Germany, subject to any modifications resulting from the present Treaty. The Commission shall constitute a Section to consider the special questions raised by the application of the present Treaty: this Section shall have consultative power only, except in cases in which the Commission shall delegate to it such powers as may be deemed convenient.

The Reparation Commission shall consider the claims and give to the Austrian Government a just opportunity to be heard.

The Commission shall concurrently draw up a schedule of payments prescribing the time and manner for securing and discharging by Austria, within thirty years dating from May 1, 1921, that part of the debt which shall have been assigned to her after the Commission has decided whether Germany is in a position to pay the balance of the total amount of claims presented against Germany and her allies and approved by the Commission. If, however, within the period mentioned, Austria fails to discharge her obligations, any balance remaining unpaid may, within the discretion of the Commission, be postponed for settlement in subsequent years or may be handled otherwise in such manner as the Allied and Associated Governments acting in accordance with the procedure laid down in this Part of the present Treaty shall determine.

Article 180.— The Reparation Commission shall, after May 1, 1921, from time to time consider the resources and capacity of Austria, and, after giving her representatives a just opportunity to be heard, shall have discretion to extend the date and to modify the form of payments such as are to be provided for in accordance with Article 179, but not to cancel any part except with the specific authority of the several Governments represented on the Commission.

Article 181.— Austria shall pay in the course of the years 1919, 1920 and the first four months of 1921, in such instalments and in such manner (whether in gold, commodities, ships, securities or otherwise) as the Reparation Commission may lay down, a reasonable sum which shall be determined by the Commission.

Out of this sum the expenses of the armies of occupation subsequent to the Armistice of November 3, 1918, shall first be met, and such supplies of food and raw materials as may be judged by the Governments of the Principal Allied and Associated Powers essential to enable Austria to meet her obligations for reparation may also, with the approval of the said Governments, be paid for out of the above sum. The balance shall be reckoned towards the liquidation of the amount due for reparation.

* * * * * *

ANNEX I.

Annex I (1–10) is similar to Annex I of Part VIII of the German Treaty except that the word Austria is substituted for Germany throughout.

ANNEX II.

1. The Commission referred to in Article 179 shall be called the "Reparation Commission" and is hereafter referred to as the "Commission."

2. The Delegates to this Commission shall be appointed by the United States of America, Great Britain, France, Italy, Japan, Belgium, Greece, Poland, Roumania, the Serb-Croat-Slovene State and Czecho-Slovakia. The United States of America, Great Britain, France, Italy, Japan and Belgium shall each appoint a Delegate. The other five Powers shall appoint a Delegate to represent them all under the conditions indicated in the third sub-paragraph of paragraph 3 hereafter. At the time when each Delegate is appointed there shall also be appointed an Assistant Delegate, who will take his place in case of illness or necessary absence, but at other times will only have the right to be present at the proceedings without taking any part therein.

On no occasion shall Delegates of more than five of the above Powers have the right to take part in the proceedings of the Commission and to record their votes. The Delegates of the United States, Great Britain, France and Italy shall have this right on all occasions other than those referred to below. The Delegate of Belgium shall have this right on all occasions other than those referred to below. The Delegate of Japan will have this right when questions relating to damage at sea are under consideration. The Delegate representing the five remaining Powers mentioned above shall have this right when questions relating to Austria, Hungary or Bulgaria are under consideration.

Each of the Governments represented on the Commission shall have the right to withdraw after giving twelve months' notice to the Commission and confirming it six months after the date of the original notification.

3. Such of the Allied and Associated Powers as may be interested shall have the right to name a Delegate to be present and act as assessor only while their respective claims and interests are under examination or discussion, but without the right to vote.

The Section to be established by the Commission under Article 179 of the present Part shall include representatives of the following Powers: the United States of America, Great Britain, France, Italy, Greece, Poland, Roumania, the Serb-Croat-Slovene State and Czecho-Slovakia. This composition of the Section shall in no way prejudge the admissibility of any claims. In voting, the representatives of the United States of America, Great Britain, France and Italy shall each have two votes.

The representatives of the five remaining Powers mentioned above shall appoint a Delegate to represent them all, who shall sit upon the Reparation Commission in the circumstances described in paragraph 2 of the present Annex. This delegate, who shall be appointed for one year, shall be chosen successively from the nationals of each of the said five Powers.

4. In the case of death, resignation, or recall of any Delegate, Assistant Delegate or Assessor, a successor to him shall be nominated as soon as possible.

5. The Commission shall have its principal permanent bureau in Paris, and shall hold its first meeting in Paris as soon as practicable after the coming into force of the present Treaty, and thereafter will meet in such place or places and at such time as may be deemed convenient and as may be necessary for the most expeditious discharge of its duties.

6. At its first meeting the Commission shall elect from among the Delegates referred to above a Chairman and a Vice-Chairman, who shall hold office for a year and shall be eligible for re-election. If a vacancy in the chairmanship or vice-chairmanship should occur during the annual period, the Commission shall proceed to a new election for the remainder of the said period.

7. The Commission is authorised to appoint all necessary officers, agents and employees who may be required for the execution of its functions, and to fix their remuneration; to constitute Sections or Committees, whose members need not necessarily be members of the Commission, and to take all executive steps necessary for the purpose of discharging its duties; and to delegate authority and discretion to officers, agents, Sections and Committees.

8. All the proceedings of the Commission shall be private unless on particular occasions the Commission shall otherwise determine for special reasons.

9. The Commission shall be required, if the Austrian Government so desire, to hear within a period which it will fix from time to time evidence and arguments on the part of Austria on any questions connected with her capacity to pay.

10. The Commission shall consider the claims and give to the Austrian Government a just opportunity to be heard, but not to take any part whatever in the decisions of the Commission. The Commission shall afford a similar opportunity to the allies of Austria when it shall consider that their interests are in question.

11. The Commission shall not be bound by any particular code or rules of law or by any particular rule of evidence or of procedure, but shall be guided by justice, equity and good faith. Its decisions must follow the same principles and rules in all cases where they are applicable. It will establish rules relating to methods of proof of claims. It may act on any trustworthy modes of computation.

12. The Commission shall have all the powers conferred upon it and shall exercise all the functions assigned to it by the present Treaty.

The Commission shall, in general, have wide latitude as to its control and handling of the whole reparation problem as dealt with in this Part, and shall have authority to interpret its provisions. Subject to the provisions of the Present Treaty, the Commission is constituted by the several Allied and Associated Governments referred to in paragraphs 2 and 3 above as the exclusive agency of the said Governments respectively for receiving, selling, holding and distributing the reparation payments to be made by Austria. The Commission must comply with the following conditions and provisions:

(a) Whatever part of the full amount of the proved claims is not paid in gold or in ships, securities, commodities or otherwise, Austria shall be required, under such conditions as the Commission may determine, to cover by way of guarantee, by an equivalent issue of bonds, obligations or otherwise, in order to constitute an acknowledgment of the said part of the debt.

(b) In periodically estimating Austria's capacity to pay the Commission shall examine the Austrian system of taxation; first, to the end that the sums for reparation which Austria is required to pay shall become a charge upon all her revenues prior to that for the service or discharge of any domestic loan, and, secondly, so as to satisfy itself that in general the Austrian scheme of taxation is fully as heavy proportionately as that of any of the Powers represented on the Commission.

The Reparation Commission shall receive instructions to take account of:

(1) The actual economic and financial position of Austrian territory as delimited by the present Treaty; and

(2) The diminution of its resources and of its capacity for payment resulting from the clauses of the present Treaty.

As long as the position of Austria is not modified the Commission shall take account of these considerations in fixing the final amount of the obligations to be imposed on Austria, the payments by which these are to be discharged, and any postponement of payment of interest which may be asked for by Austria.

(c) The Commission shall, as provided in Article 181, take from Austria, by way of security for and acknowledgment of her debt, gold bearer bonds free of all taxes or charges of every description established or to be established by the Austrian Government or by any authorities subject to them. These bonds will be delivered at any time that may be judged expedient by the Commission, and in three portions, of which the respective amounts will be also fixed by the Commission, the crowns gold being payable in conformity with Article 213 of Part X (Financial Clauses) of the present treaty:

(1) A first issue in bearer bonds payable not later than May 1, 1921, without interest. There shall be specially applied to the amortisation of these bonds the payments which Austria is pledged to make in conformity with Article 181 of this Part, after deduction of the sums used for the reimbursement of the expenses of the armies of occupation and other payments for foodstuffs and raw materials. Such bonds as may not have been redeemed by May 1, 1921, shall then be exchanged for new bonds of the same type as those provided for below (paragraph 12, (c) 2).

(2) A second issue in bearer bonds bearing interest at 2½ per cent. between 1921 and 1926, and thereafter at 5 per cent. with an additional 1 per cent. for amortisation beginning in 1926 on the whole amount of the issue.

(3) An undertaking in writing to issue, when, but not until, the Commission is satisfied that Austria can meet the interest and sinking fund obligations, a further instalment of bearer bonds bearing interest at 5 per cent., the time and mode of payment of principal and interest to be determined by the Commission.

The dates for the payment of interest, the manner of employing the amortisation fund and all other questions relating to the issue, management and regulation of the bond issue shall be determined by the Commission from time to time.

Further issues by way of acknowledgment and security may be required as the Commission subsequently determines from time to time.

In case the Reparation Commission should proceed to fix definitely and no longer provisionally the sum of the common charges to be borne by Austria as a result of the claims of the Allied and Associated Powers, the Commission shall immediately annul all bonds which have been issued in excess of this sum.

(d) In the event of bonds, obligations or other evidence of indebtedness issued by Austria by way of security for or acknowledgment of her reparation debt being disposed of outright, not by way of pledge, to persons other than the several Governments in whose favour Austria's original reparation indebtedness was created, an amount of such reparation indebtedness shall be deemed to be extinguished corresponding to the nominal value of the bonds, etc., so disposed of outright, and the obligation of Austria in respect of such bonds shall be confined to her liabilities to the holders of the bonds, as expressed upon their face.

(e) The damage for repairing, reconstructing and rebuilding property situated in the invaded and devastated districts, including re-installation of furniture, machinery and other equipment, will be calculated according to the cost at the date when the work is done.

(f) Decisions of the Commission relating to the total or partial cancellation of the capital or interest of any of the verified debt of Austria must be accompanied by a statement of its reasons.

13. As to voting the Commission will observe the following rules:

When a decision of the Commission is taken, the votes of all the Delegates entitled to vote, or in the absence of any of them, of their assistant Delegates, shall be recorded. Abstention from voting is to be treated as a vote against the proposal under discussion. Assessors shall have no vote.

On the following questions unanimity is necessary:

(a) Questions involving the sovereignty of any of the Allied and Associated Powers or the cancellation of the whole or any part of the debt or obligations of Austria;

(b) Questions of determining the amount and conditions of bonds or other obligations to be issued by the Austrian Government and of fixing the time and manner for selling, negotiating or distributing such bonds;

(c) Any postponement, total or partial, beyond the end of 1930, of the payment of instalments falling due between May 1, 1921, and the end of 1926 inclusive.

(d) Any postponement, total or partial, or any instalments falling due after 1926 for a period exceeding three years.

(e) Questions of applying in any particular case a method of measuring damages different from that which has been previously applied in a similar case.

(f) Questions of the interpretation of the provisions of this Part of the present Treaty.

All other questions shall be decided by the vote of the majority.

In the case of any difference of opinion among the Delegates, which cannot be solved by reference to their Governments, upon the question whether a given case is one which requires a unanimous vote for its decision or not, such difference shall be referred to the immediate arbitration of some impartial person to be agreed upon by their Governments, whose award the Allied and Associated Governments agree to accept.

14. Decisions of the Commission, in accordance with the powers conferred upon it, shall forthwith become binding and may be put into immediate execution without further proceedings.

15. The Commission shall issue to each of the interested Powers in such form as the Commission shall fix:

(1) A certificate stating that it holds for the account of the said Power bonds of the issues mentioned above, the said certificate on the demand of the Powers concerned being divisible into a number of parts not exceeding five;

(2) From time to time certificates stating the goods delivered by Austria on account of her reparation debt which it holds for the account of the said Power.

Such certificates shall be registered and, upon notice to the Commission, may be transferred by endorsement.

When bonds are issued for sale or negotiation, and when goods are delivered by the Commission, certificates to an equivalent value must be withdrawn.

16. Interest shall be debited to Austria as from May 1, 1921, in respect of her debt as determined by the Commission after allowing for sums already covered by cash payments or their equivalent by bonds issued to the Commission or under Article 189. The rate of interest shall be 5 per cent. unless the Commission shall determine at some future time that circumstances justify a variation of this rate.

The Commission, in fixing on May 1, 1921, the total amount of the debt of Austria, may take account of interest due on sums arising out of reparation and of material damage as from November 3, 1918, up to May 1, 1921.

17. In case of default by Austria in the performance of any obligation under this part of the present Treaty the Commission will forthwith give notice of such default to each of the interested Powers and may make such recommendations as to the action to be taken in consequence of such default as it may think necessary.

18. The measures which the Allied and Associated Powers shall have the right to take, in the case of voluntary default by Austria, and which Austria agrees not to regard as acts of war, may include economic and financial prohibitions and reprisals and in general such other measures as the respective Governments may determine to be necessary in the circumstances.

19. Payments required to be made in gold or its equivalent on account of the proved claims of the Allied and Associated Powers may at any time be accepted by the Commission in the form of chattels, properties, commodities, businesses, rights, concessions within or without Austrian territory, ships, bonds, shares or securities of any kind or currencies of Austria or other States, the value of such substitutes for gold being fixed at a fair and just amount by the Commission itself.

20. The Commission in fixing or accepting payment in specified properties or rights shall have due regard for any legal or equitable interests of the Allied and Associated Powers or of their nationals therein.

21. No member of the Commission shall be responsible, except to the Government appointing him, for any action or omission as such member. No one of the Allied and Associated Governments assumes any responsibility in respect of any other Government.

22. Subject to the provisions of the present Treaty this Annex may be amended by the unanimous decision of the Governments represented from time to time upon the Commission.

23. When all the amounts due from Austria and her allies under the present Treaty or the decisions of the Commission have been discharged, and all sums received, or their equivalents, have been distributed to the Powers interested, the Commission shall be dissolved.

ANNEX III.

1. Austria recognises the right of the Allied and Associated Powers to the replacement ton for ton (gross tonnage) and class for class of all merchant ships and fishing boats lost or damaged owing to the war.

Nevertheless and in spite of the fact that the tonnage of Austrian shipping at present in existence is much less than that lost by the Allied and Associated Powers in consequence of the aggression of Austria and her allies, the right thus recognised will be enforced on the Austrian ships and boats under the following conditions:

The Austrian Government on behalf of themselves, and so as to bind all other persons interested, cede to the Allied and Associated Governments the property in all merchant ships and fishing boats belonging to nationals of the former Austrian Empire.

2. The Austrian Government will, within two months of the coming into force of the present Treaty, deliver to the Reparation Commission all the ships and boats mentioned in paragraph 1.

3. The ships and boats in paragraph 1 include all ships and boats which (*a*) fly or may be entitled to fly the Austro-Hungarian merchant flag and are registered in a port of the former Austrian Empire, or (*b*) are owned by any national, company or corporation of the former Austrian Empire or by any company or corporation belonging to a country other than an Allied or Associated country and under the control or direction of nationals of the former Austrian Empire: or (*c*) which are now under construction (1) in the former Austrian Empire (2) in other than Allied or Associated countries for the account of any national company or corporation of the former Austrian Empire.

4. For the purpose of providing documents of title for the ships and boats to be handed over as above mentioned, the Austrian Government will:

(*a*) Deliver to the Reparation Commission in respect of each vessel a bill of sale or other document of title evidencing the transfer to the Commission of the entire property in the vessel, free from all encumbrances, charges and liens of all kinds as the Commission may require;

(*b*) Take all measures that may be indicated by the Reparation Commission for ensuring that the ships themselves shall be placed at its disposal.

5. Austria undertakes to restore in kind and in normal condition of upkeep to the Allied and Associated Powers within two months of the coming into force of the present Treaty in accordance with procedure to be laid down by the Reparation Commission any boats and other movable appliances belonging to inland navigation which, since July 28, 1914, have by any means whatever come into her possession or into the possession of her nationals and which can be identified.

With a view to make good the loss in inland navigation tonnage from whatever cause arising which has been incurred during the war by the Allied and Associated Powers, and which cannot be made good by means of the restitution prescribed above, Austria agrees to cede to the Reparation Commission a portion of the Austrian river fleet up to the amount of the loss mentioned above, provided such cession shall not exceed 20 per cent. of the river fleet as it existed on November 3, 1918.

The conditions of this cession shall be settled by the arbitrators referred to in Article 300 of Part XII (Ports, Waterways and Railways) of the present Treaty, who are charged with the settlement of difficulties relating to the apportionment of river tonnage resulting from the new international régime applicable to certain river systems or from the territorial changes affecting those systems.

6. Austria agrees to take any measures that may be indicated to her by the Reparation Commission for obtaining a full title to the property in all ships which have, during the war, been transferred or are in process of transfer to neutral flags without the consent of the Allied and Associated Governments.

7. Austria waives all claims of any description against the Allied and Associated Governments and their nationals in respect of the detention, employment, loss or damage of any Austrian ships or boats.

8. Austria renounces all claims to vessels or cargoes sunk by or in consequence of naval action and subsequently salved in which any of the Allied or Associated Governments or their nationals may have any interest either as owners, charterers, insurers, or otherwise, notwithstanding any decree of condemnation which may have been made by a Prize Court of the former Austro-Hungarian Monarchy or of its allies.

ANNEX IV.

1. The Allied and Associated Powers require and Austria undertakes that in part satisfaction of her obligations expressed in this Part she will, as hereinafter provided, devote her economic resources directly to the physical restoration of the invaded areas of the Allied and Associated Powers to the extent that these Powers may determine.

2. The Allied and Associated Governments may file with the Reparation Commission lists showing:

(*a*) Animals, machinery, equipment, tools and like articles of a commercial character which have been seized, consumed or destroyed by Austria, or destroyed in direct consequence of military operations, and which such Governments, for the purpose of meeting immediate and urgent needs, desire to have replaced by animals and articles of the same nature which are in being in Austrian territory at the date of the coming into force of the present Treaty;

(*b*) Reconstruction materials (stones, bricks, refractory bricks, tiles, wood, window glass, steel, lime, cement, etc.), machinery, heating apparatus, furniture and like articles of a commercial character, which the said Governments desire to have produced and manufactured in Austria and delivered to them to permit of the restoration of the invaded areas.

3. The lists relating to the articles mentioned in 2 (*a*) above shall be filed within sixty days after the date of the coming into force of the present Treaty.

The lists relating to the articles in 2 (*b*) shall be filed on or before December 31, 1919.

The lists shall contain all such details as are customary in commercial contracts dealing with the subject-matter, including specifications, dates of delivery (but not extending over more than four years) and places of delivery, but not prices or value, which shall be fixed as hereinafter provided by the Commission.

4. Immediately upon the filing of such lists with

the Commission, the Commission shall consider the amount and number of the materials and animals mentioned in the lists provided for above which are to be required of Austria. In reaching a decision on this matter the Commission shall take into account such domestic requirements of Austria as it deems essential for the maintenance of Austrian social and economic life, the prices and dates at which similar articles can be obtained in the Allied and Associated countries as compared with those to be fixed for Austrian articles, and the general interest of the Allied and Associated Governments that the industrial life of Austria be not so disorganised as to affect adversely the ability of Austria to perform the other acts of reparation stipulated for.

Machinery, equipment, tools and like articles of a commercial character in actual industrial use are not, however, to be demanded of Austria unless there is no free stock of such articles respectively which is not in use and is available, and then not in excess of 30 per cent. of the quantity of such articles in use in any one establishment or undertaking.

The Commission shall give representatives of the Austrian Government an opportunity and a time to be heard as to their capacity to furnish the said materials, articles and animals.

The decision of the Commission shall thereupon and at the earliest possible moment be communicated to the Austrian Government and to the several interested Allied and Associated Governments.

The Austrian Government undertakes to deliver the materials, articles and animals as specified in the said communication, and the interested Allied and Associated Governments severally agree to accept the same, provided they conform to the specification given or are not, in the judgment of the Commission, unfit to be utilised in the work of reparation.

5. The Commission shall determine the value to be attached to the materials, articles and animals to be delivered in accordance with the foregoing, and the Allied or Associated Power receiving the same agrees to be charged with such value, and the amount thereof shall be treated as a payment by Austria to be divided in accordance with Article 183 of this Part of the present Treaty.

In case where the right to require physical restoration as above provided is exercised, the Commission shall ensure that the amount to be credited against the reparation obligation of Austria shall be fair value for work done or material supplied by Austria, and that the claim made by the interested Power in respect of the damage so repaired by physical restoration shall be discharged to the extent of the proportion which the damage thus repaired bears to the whole of the damage thus claimed for.

6. As an immediate advance on account of the animals referred to in paragraph 2 above, Austria undertakes to deliver in equal monthly instalments in the three months following the coming into force of the present Treaty the following quantities of live stock:

TO THE ITALIAN GOVERNMENT.

4,000 milch cows of from 3 to 5 years;
1,000 heifers;
50 bulls from 18 months to 3 years;
1,000 calves;
1,000 working bullocks;
2,000 sows.

TO THE SERB-CROAT-SLOVENE GOVERNMENT.

1,000 milch cows of from 3 to 5 years;
300 heifers;
25 bulls from 18 months to 3 years;
1,000 calves;
500 working bullocks;
1,000 draught horses;
1,000 sheep.

TO THE ROUMANIAN GOVERNMENT.

1,000 milch cows of from 3 to 5 years;
500 heifers;
25 bulls from 18 months to 3 years;
1,000 calves;
500 working bullocks;
1,000 draught horses;
1,000 sheep.

The animals delivered shall be of average health and condition.

If the animals so delivered cannot be identified as animals taken away or seized, the value of such animals shall be credited against the reparation obligations of Austria in accordance with paragraph 5 of this Annex.

7. As an immediate advance on account of the articles referred to in paragraph 2 above, Austria undertakes to deliver during the six months following the coming into force of the present Treaty in equal monthly instalments such supplies of furniture in hard and soft wood intended for sale in Austria as the Allied and Associated Powers shall ask for month by month through the Reparation Commission and which the Commission shall consider justified on the one hand by the seizures and destruction carried out in the course of the war on the territory of the said Powers and on the other hand proportionate to the supplies at the disposal of Austria. The price of the articles so supplied shall be carried to the credit of Austria under the conditions provided for in paragraph 5 of this Annex.

ANNEX V.

1. Austria shall give, as partial reparation, to the Allied and Associated Governments severally an option during the five years following the coming into force of the present Treaty for the annual delivery of the raw materials hereinafter enumerated: the amounts delivered to bear the same relation to their annual importations of these materials before the war from Austria-Hungary as the resources of Austria as now delimited by the present Treaty bear to the resources before the war of the former Austro-Hungarian Monarchy.

Timber and timber manufactures;
Iron and iron alloys;
Magnesite.

2. The price paid for the products referred to in the preceding paragraph shall be the same as the price paid by Austrian nationals under the same conditions of shipment to the Austrian frontier and shall be subject to any advantages which may be accorded similar products furnished to Austrian nationals.

3. The foregoing options shall be exercised through the intervention of the Reparation Commission, which subject to the specific provisions hereof shall have power to determine all questions relative to procedure and qualities and quantities of products and the times and modes of delivery and payment. In giving notice to the Austrian Government of the foregoing options, the Commission shall give at least 120 days' notice of deliveries to be made after January 1, 1920, and at least 30 days' notice of deliveries to be made between the coming into force of the present Treaty and January 1, 1920. If the Commission shall determine that the full exercise of the foregoing options would interfere unduly with the industrial requirements of Austria, the Commission is authorised to postpone or to cancel deliveries and in so doing to settle all questions of priority.

ANNEX VI.

Austria renounces on her own behalf and on behalf of her nationals in favour of Italy all rights, titles or privileges of whatever nature in any submarine cables or portions of cables connecting Italian territory, including the territories which are assigned to Italy under the present Treaty.

Austria also renounces on her own behalf and on behalf of her nationals in favour of the Principal Allied and Associated Powers all rights, titles and privileges of whatever nature in the submarine cables, or portions thereof, connecting the territories ceded by Austria under the terms of the present Treaty to the various Allied and Associated Powers.

The States concerned shall provide for the upkeep of the installations and the proper working of the said cables.

As regards the cable from Trieste to Corfu, the Italian Government shall enjoy in its relations with the company owning this cable the same position as that held by the Austro-Hungarian Government.

The value of the cables or portions of cables referred to in the two first paragraphs of the present Annex, calculated on the basis of the original cost, less a suitable allowance for depreciation, shall be credited to Austria in the reparation account.

SECTION II.— SPECIAL PROVISIONS.

Article 191.— In carrying out the provisions of Article 184 of this Part Austria undertakes to surrender to each of the Allied and Associated Powers respectively all records, documents, objects of antiquity and of art, and all scientific and bibliographical material taken away from the invaded territories, whether they belong to the State or to provincial, communal, charitable or ecclesiastical administrations or other public or private institutions.

Article 192.— Austria shall in the same manner restore objects of the same nature as those referred to in the preceding Article which may have been taken away since June 1, 1914, from the ceded territories,

with the exception of objects bought from private owners.

The Reparation Commission will apply to these objects the provisions of Article 208 of Part IX (Financial Clauses) of the present Treaty, if these are appropriate.

Article 193.— Austria will give up to each of the Allied and Associated Governments respectively all the records, documents and historical material possessed by public institutions which may have a direct bearing on the history of the ceded territories and which have been removed during the last ten years. This last-mentioned period as far as concerns Italy, shall be extended to the date of the proclamation of the Kingdom (1861).

The new States arising out of the former Austro-Hungarian Monarchy and the States which receive part of the territory of that Monarchy undertake on their part to hand over to Austria the records, documents and material dating from a period not exceeding twenty years which have a direct bearing on the history or administration of the territory of Austria and which may be found in the territories transferred.

Article 194.— Austria acknowledges that she remains bound, as regards Italy, to execute the obligations referred to in Article 15 of the Treaty of Zurich of November 10, 1859, in Article 18 of the Treaty of Vienna of October 3, 1866, and in the Convention of Florence of July 14, 1868, concluded between Italy and Austria-Hungary, in so far as the Articles referred to have not in fact been executed in their entirety and in so far as the documents and objects in question are situated in the territory of Austria or her allies.

Article 195.— Within a period of twelve months after the coming into force of the present Treaty a Committee of three jurists appointed by the Reparation Commission shall examine the conditions under which the objects or manuscripts in possession of Austria, enumerated in Annex I hereto, were carried off by the House of Hapsburg and by the other Houses which have reigned in Italy. If it is found that the said objects or manuscripts were carried off in violation of the rights of the Italian provinces the Reparation Commission, on the report of the Committee referred to, shall order their restitution. Italy and Austria agree to accept the decisions of the Commission.

Belgium, Poland and Czecho-Slovakia may also submit claims for restitution, to be examined by the same Committee of three jurists, relating to the objects and documents enumerated in Annexes II, III and IV hereto. Belgium, Poland, Czecho-Slovakia and Austria undertake to accept the decisions taken by the Reparation Commission as the result of the report of the said Committee.

Article 196.— With regard to all objects of artistic, archæological, scientific, or historic character forming part of collections which formerly belonged to the Government or the Crown of the Austro-Hungarian Monarchy and are not otherwise provided for in this present Treaty, Austria undertakes:

(*a*) To negotiate, when required, with the States concerned for an amicable arrangement whereby any portion thereof or any objects belonging thereto which ought to form part of the intellectual patrimony of the ceded districts may be returned to their districts of origin on terms of reciprocity, and

(*b*) For twenty years, unless a special arrangement is previously arrived at, not to alienate or disperse any of the said collections or to dispose of any of the above objects but at all times to ensure their safety and good condition and to make them available, together with inventories, catalogues and administrative documents relating to the said collection, at all reasonable times to students who are nationals of any of the Allied and Associated Powers.

ANNEX I.

Tuscany.

The Crown jewels (such part as remains after their dispersion); the private jewels of the Princess Electress of Medici; the medals which form part of the Medici heirlooms and other precious objects — all being domanial property according to contractual agreements and testamentary dispositions — removed to Vienna during the eighteenth century.

Furniture and silver plate belonging to the House of Medici and the "jewel of Aspasios" in payment of debts owed by the House of Austria to the Crown of Tuscany.

The ancient instruments of astronomy and physics belonging to the Academy of Cimento removed by the House of Lorraine and sent as a present to the cousins of the Imperial House of Vienna.

Modena.

A "Virgin" by Andrea del Sarto and four drawings by Correggio belonging to the Pinacothek of Modena and removed in 1859 by Duke Francis V.

The three following MSS. belonging to the library of Modena:

Biblia vulgata (Cod. Lat. 422/23),
Brevarium Romanum (Cod. Lat. 424) and
Officium Beatæ Virginis (Cod. Lat. 262),

carried off by Duke Francis V in 1859.

The bronzes carried off under the same circumstances in 1859.

Certain objects (among others two pictures by Salvator Rosa and a portrait by Dosso Dossi) claimed by the Duke of Modena in 1868 as a condition of the execution of the Convention of June 20, 1868, and other objects given up in 1872 in the same circumstances.

Palermo.

Objects made in Palermo in the twelfth century for the Norman kings and employed in the coronation of the Emperors, which were carried off from Palermo and are now in Vienna.

Naples.

Ninety-eight MSS. carried off from the Library of S. Giovanni a Carbonara and other libraries at Naples in 1718 under the orders of Austria and sent to Vienna.

Various documents carried off at different times from the State Archives of Milan, Mantua, Vienna, Modena and Florence.

ANNEX II.

I. The Triptych of S. Ildephonse, by Rubens, from the Abbey of Saint-Jacques sur Cowdenberg at Brussels, bought in 1777 and removed to Vienna.

II. Objects and documents removed for safety from Belgium to Austria in 1794:

(*a*) Arms, armour and other objects from the old Arsenal of Brussels.

(*b*) The Treasure of the "Toison d'or" preserved in previous times in the "Chapelle de la Cour" at Brussels.

(*c*) Coinage, stamps, medals, and counters by Theodore van Berckel which were an essential feature in the archives of the "Chambre des Comptes" at Brussels.

(*d*) The original manuscript copies of the "carte chorographique" of the Austrian Low Countries drawn up by Lieut.-General Comte Jas de Ferraris between 1770 and 1777, and the documents relating thereto.

ANNEX III.

Object removed from the territory forming part of Poland subsequent to the first partition in 1772:

The gold cup of King Ladislas IV, No. 1,114 of the Court Museum at Vienna.

ANNEX IV.

(1) Documents, historical memoirs, manuscripts, maps, etc., claimed by the present State of Czecho-Slovakia, which Thaulaw von Rosenthal removed by order of Maria Theresa.

(2) The documents originally belonging to the Royal Aulic Chancellory of Bohemia and the Aulic Chamber of Accounts of Bohemia, and the works of art which formed part of the installation of the Royal Chateau of Prague and other royal castles in Bohemia, which were removed by the Emperors Mathias, Ferdinand II, Charles VI (about 1718, 1723 and 1737) and Francis Joseph I; all of which are now in the archives, Imperial castles, museums and other central public institutions at Vienna.

PART IX.— FINANCIAL CLAUSES.

Article 197.— Subject to such exceptions as the Reparation Commission may make, the first charge upon all the assets and revenues of Austria shall be the cost of reparation and all other costs arising under the present Treaty or any treaties or agreements supplementary thereto, or under arrangements concluded between Austria and the Allied and Associated Powers during the Armistice signed on November 3, 1918.

Up to May 1, 1921, the Austrian Government shall not export or dispose of, and shall forbid the export or disposal of, gold without the previous approval of the Allied and Associated Powers acting through the Reparation Commission.

Article 198.— There shall be paid by the Government of Austria the total cost of all armies of the Allied and Associated Governments occupying territory

within the boundaries of Austria as defined by the present Treaty from the date of the signature of the Armistice of November 3, 1918, including the keep of men and beasts, lodging and billeting, pay and allowances, salaries and wages, bedding, heating, lighting, clothing, equipment, harness and saddlery, armament and rolling-stock, air services, treatment of sick and wounded, veterinary and remount services, transport services of all sorts (such as by rail, sea, or river, motor-lorries), communications and correspondence, and, in general, the cost of all administrative or technical services the working of which is necessary for the training of troops and for keeping their numbers up to strength and preserving their military efficiency.

The cost of such liabilities under the above heads, so far as they relate to purchases or requisitions by the Allied and Associated Governments in the occupied territory, shall be paid by the Austrian Government to the Allied and Associated Governments in crowns or any legal currency of Austria which may be substituted for crowns at the current or agreed rate of exchange.

All other of the above costs shall be paid in the currency of the country to which the payment is due.

Article 199.— Austria confirms the surrender of all material handed over or to be handed over to the Allied and Associated Powers in accordance with the Armistice of November 3, 1918, and subsequent Armistice Agreements, and recognises the title of the Allied and Associated Powers to such material.

There shall be credited to the Government of Austria, against the sums due from it to the Allied and Associated Powers for reparation, the value, as assessed by the Reparation Commission, of such of the above material for which, as having non-military value, credit should, in the judgment of the Reparation Commission, be allowed to the Government of Austria.

Property belonging to the Allied and Associated Governments or their nationals restored or surrendered under the Armistice agreements in specie shall not be credited to the Government of Austria.

Article 200.— The priority of the charges established by Article 197 shall, subject to the qualifications made in the last paragraph of this Article, be as follows:

(*a*) The cost of the armies of occupation, as defined under Article 198, during the armistice;

(*b*) The cost of any armies of occupation, as defined under Article 198, after the coming into force of the present Treaty;

(*c*) The cost of reparation arising out of the present Treaty or any treaties or conventions supplementary thereto;

(*d*) The cost of all other obligations incumbent on Austria under the Armistice Conventions or under this Treaty or any treaties or conventions supplementary thereto.

The payment for such supplies of food and raw material for Austria and such other payments as may be judged by the Principal Allied and Associated Powers to be essential to enable Austria to meet her obligations in respect of reparation shall have priority to the extent and upon the conditions which have been or may be determined by the Governments of the said Powers.

Article 201.— The right of each of the Allied and Associated Powers to dispose of enemy assets and property within its jurisdiction at the date of the coming into force of the present Treaty is not affected by the foregoing provisions.

Article 202.— Nothing in the foregoing provisions shall prejudice in any manner charges or mortgages lawfully effected in favour of the Allied and Associated Powers or their nationals respectively before the date at which a state of war existed between Austria-Hungary and the Allied or Associated Power concerned by the former Austrian Government or by nationals of the former Austrian Empire on assets in their ownership at that date, except in so far as variations of such charges or mortgages are specifically provided for under the terms of the present Treaty or conventions supplementary thereto.

Article 203.— 1. Each of the States to which territory of the former Austro-Hungarian Monarchy is transferred, and each of the States arising from the dismemberment of that Monarchy, including Austria, shall assume responsibility for a portion of the debt of the former Austrian Government which is specifically secured on railways, salt mines or other property, and which was in existence on July 28, 1914. The portion to be so assumed by each State shall be such portion as in the opinion of the Reparation Commission represents the secured debt in respect of the railways, salt mines, and other properties transferred to that State under the terms of this Treaty or conventions supplementary thereto.

The amount of the liability in respect of secured debt so assumed by each State, other than Austria, shall be valued by the Reparation Commission, on such basis as the Commission may consider equitable, and the value so ascertained shall be deducted from the amount payable by the State in question to Austria in respect of property of the former or existing Austrian Government which the State acquires with the territory. Each State shall be solely responsible in respect of that portion of the secured debt for which it assumes responsibility under the terms of this Article, and holders of the debt for which responsibility is assumed by States other than Austria shall have no recourse against the Government of any other State.

Any property which was specifically pledged to secure any debt referred to in this Article shall remain specifically pledged to secure the new debt. But in case the property so pledged is situated as the result of the present Treaty in more than one State, that portion of the property which is situated in a particular State shall constitute the security only for that part of the debt which is apportioned to that State, and not for any other part of the debt.

For the purposes of the present Article there shall be regarded as secured debt payments due by the former Austrian Government in connection with the purchase of railways or similar property; the distribution of the liability for such payments will be determined by the Reparation Commission in the same manner as in the case of secured debt.

Debts for which the responsibility is transferred under the terms of this Article shall be expressed in terms of the currency of the State assuming the responsibility, if the original debt was expressed in terms of Austro-Hungarian paper currency. For the purposes of this conversion the currency of the assuming State shall be valued in terms of Austro-Hungarian paper kronen at the rate at which those kronen were exchanged into the currency of the assuming State by that State when it first substituted its own currency for Austro-Hungarian kronen. The basis of this conversion of the currency unit in which the bonds are expressed shall be subject to the approval of the Reparation Commission, which shall, if it thinks fit, require the State effecting the conversion to modify the terms thereof. Such modification shall only be required if, in the opinion of the Commission, the foreign exchange value of the currency unit or units substituted for the currency unit in which the old bonds are expressed is substantially less at the date of the conversion than the foreign exchange value of the original currency unit.

If the original Austrian debt was expressed in terms of a foreign currency or foreign currencies, the new debt shall be expressed in terms of the same currency or currencies.

If the original Austrian debt was expressed in terms of Austro-Hungarian gold coin, the new debt shall be expressed in terms of equivalent amounts of pounds sterling and gold dollars of the United States of America, the equivalents being calculated on the basis of the weight and the fineness of gold of the three coins as enacted by law on January 1, 1914.

Any foreign exchange options, whether at fixed rates or otherwise, embodied explicitly or implicitly in the old bonds shall be embodied in the new bonds also.

2. Each of the States to which territory of the former Austro-Hungarian Monarchy is transferred, and each of the States arising from the dismemberment of that Monarchy, including Austria, shall assume responsibility for a portion of the unsecured bonded debt of the former Austrian Government which was in existence on July 28, 1914, calculated on the basis of the ratio between the average for the three financial years 1911, 1912, 1913, of such revenues of the distributed territory and the average for the same years of such revenues of the whole of the former Austrian territories as in the judgment of the Reparation Commission are best calculated to represent the financial capacity of the respective territories. In making the above calculation, the revenues of Bosnia and Herzegovina shall not be included.

The responsibilities in respect of bonded debt to be assumed under the terms of this Article shall be discharged in the manner laid down in the Annex hereto.

The Austrian Government shall be solely responsible for all the liabilities of the former Austrian Government incurred prior to July 28, 1914, other than those evidenced by the bonds, bills, securities and currency notes which are specifically provided for under the terms of the present Treaty.

Neither the provisions of this Article nor the provisions of the Annex hereto shall apply to securities of the former Austrian Government deposited with the Austro-Hungarian Bank as security for the currency notes issued by that bank.

ANNEX.

The amount of the former unsecured Austrian Government Bonded Debt, the responsibility for which is to be distributed under the provisions of Article 203, shall be the amount of that debt as it stood on July 28, 1914, after deducting that portion which represents of the liability of the former Hungarian Government for that debt as provided by the additional Convention relating to the contribution of the countries of the Sacred Hungarian Crown to the charges of the general debt of the Austro-Hungarian State approved by the Austro-Hungarian Law of December 30, 1907, B. L. I. No. 278.

Each State assuming responsibility for the old unsecured Austrian Government debt shall, within three months of the coming into force of the present Treaty, if it has not already done so, stamp with the stamp of its own Government all the Bonds of that debt existing in its own territory. The distinguishing numbers of the Bonds so stamped shall be recorded and shall be furnished, together with the other records of the stamping, to the Reparation Commission.

Holders of Bonds within the territory of a State which is required to stamp old Austrian Bonds under the terms of this Annex shall, from the date of the coming into force of the present Treaty, be creditors in respect of these Bonds of that State only, and they shall have no recourse against the Government of any other State.

Each State which, under the terms of Article 203, is required to assume responsibility for a portion of the old unsecured Austrian Government Debt, and which has ascertained by means of stamping the old Austrian Bonds that the Bonds of any particular issue of such old Austrian Bonds held within its territory were smaller in amount than the amount of that issue for which, in accordance with the assessment of the Reparation Commission, it is held responsible, shall deliver to the Reparation Commission new Bonds equal in amount to the difference between the amount of the issue for which it is responsible and the amount of the same issue recorded as held within its own territory. Such new Bonds shall be of such denominations as the Reparation Commission may require. They shall carry the same rights as regards interest and amortisation as the old Bonds for which they are substituted, and in all other respects the conditions of the new Bonds shall be fixed subject to the approval of the Reparation Commission.

If the original Bond was expressed in terms of Austro-Hungarian paper currency, the new Bond by which it is replaced shall be expressed in terms of the currency of the State issuing the new Bond, and for the purpose of this currency conversion, the currency of the new State shall be valued in terms of Austro-Hungarian paper kronen at the rate at which those kronen were exchanged for the currency of the new State by that State when it first substituted its own currency for Austro-Hungarian paper kronen. The basis of this conversion of the currency unit in which the Bonds are expressed shall be subject to the approval of the Reparation Commission, which shall, if it thinks fit, require the State effecting the conversion to modify the terms thereof. Such modification shall only be required if, in the opinion of the Commission, the foreign exchange value of the currency unit or units substituted for the currency unit in which the old Bonds are expressed is substantially less at the date of the conversion than the foreign exchange value of the original currency unit.

If the original Bond was expressed in terms of a foreign currency or foreign currencies, the new Bond shall be expressed in terms of the same currency or currencies. If the original Bond was expressed, in terms of Austro-Hungarian gold coin, the new Bond shall be expressed in terms of equivalent amounts of pounds sterling and gold dollars of the United States of America, the equivalents being calculated on the basis of the weight and fineness of gold of the three coins as enacted by law on January 1, 1914.

Any foreign exchange options, whether at fixed rates or otherwise, embodied explicitly or implicitly in the old Bonds shall be embodied in the new Bonds also.

Each State which under the terms of Article 203 is required to assume responsibility for a portion of the old unsecured Austrian Government Debt, which has ascertained by means of stamping the old Austrian Bonds that the Bonds of any particular issue of such old Austrian Bonds held within its territory were larger in amount than the amount of that issue for which it is held responsible in accordance with the assessment of the Reparation Commission, shall receive from the Reparation Commission its due proportionate share of each of the new issues of Bonds issued in accordance with the provisions of this Annex.

Holders of unsecured Bonds of the old Austrian Government Debt held outside the boundaries of the States to which territory of the former Austro-Hungarian Monarchy is transferred, or of States arising from the dismemberment of that Monarchy, including Austria, shall deliver through the agency of their respective Governments to the Reparation Commission the Bonds which they hold, and in exchange therefor the Reparation Commission shall deliver to them certificates entitling them to their due proportionate share of each of the new issues of Bonds corresponding to and issued in exchange for their surrendered Bonds under the provisions of this Annex.

The share of each State or private holder entitled to a share in any new issue of Bonds issued in accordance with the provisions of this Annex shall bear such proportion to the total amount of Bonds of that new issue as the holding of the State or private owner in question of the old issue of Bonds bears to the total amount of the old issue presented to the Reparation Commission for exchange into new Bonds in accordance with the provisions of this Annex. Each such participating State or private holder will also be entitled to its or his due proportionate share of the new Bonds issued under the terms of the Treaty with Hungary in exchange for that portion of the former Austrian Government Debt for which Hungary accepted liability under the Agreement of 1907.

The Reparation Commission shall, if it think fit, arrange with the holders of the new Bonds provided for by this Annex a consolidation loan of each debtor State, the Bonds of which loan shall be substituted for the various different issues of new Bonds on such terms as may be agreed upon by the Commission and the bondholders.

The State assuming liability for any Bond of the former Austrian Government shall assume any liability attaching to the Bond in respect of unpaid coupons or sinking fund instalments accrued since the date of the coming into force of the present Treaty.

Article 204.— 1. In case the new boundaries of any States, as laid down by the present Treaty, shall divide any local area which was a single unit for borrowing purposes and which had a legally constituted public debt, such debt shall be divided between the new divisions of the area in a proportion to be determined by the Reparation Commission in accordance with the principles laid down for the reapportionment of Government Debts under Article 203, and the responsibility so assumed shall be discharged in such a manner as the Reparation Commission shall determine.

2. The public debt of Bosnia and Herzegovina shall be regarded as the debt of a local area and not as part of the public debt of the former Austro-Hungarian Monarchy.

Article 205.— Within two months of the coming into force of the present Treaty, each one of the States to which territory of the former Austro-Hungarian Monarchy is transferred and each one of the States arising from the dismemberment of that Monarchy, including Austria, shall, if it has not already done so, stamp with the stamp of its own Government the securities of various kinds which are separately provided for, representing the bonded war debt of the former Austrian Government as legally constituted prior to October 27, 1918, and existing in their respective territories.

The securities thus stamped shall be withdrawn and replaced by certificates, their distinguishing numbers shall be recorded, and any securities withdrawn, together with the documents recording the transaction, shall be sent to the Reparation Commission.

The stamping and replacement of a security by a certificate under the provisions of this Article shall not imply that the State so stamping and replacing a security thereby assumes or recognises any obligation in respect of it, unless the State in question desires that the stamping and replacement should have this implication.

The aforementioned States, with the exception of Austria, shall be free from any obligation in respect of the war debt of the former Austrian Government, wherever that debt may be held, but neither the Governments of those States nor their nationals shall have recourse under any circumstances whatever against any other States including Austria in respect of the war debt bonds of which they or their nationals are the beneficial owners.

The war debt of the former Austrian Government which was prior to the signature of the present Treaty in the beneficial ownership of nationals or Governments or States other than those to which territory of the former Austro-Hungarian Monarchy is assigned shall be a charge upon the Government of Austria only, and no one of the other States aforementioned shall be held responsible for any part thereof.

The provisions of this Article shall not apply to the securities of the former Austrian Government deposited by that Government with the Austro-Hungarian Bank as security for the currency notes of the said bank.

The existing Austrian Government shall be solely responsible for all the liabilities of the former Austrian Government incurred during the war, other than those evidenced by the bonds, bills, securities and currency notes which are specifically provided for under the terms of the present Treaty.

Article 206.— 1. Within two months of the coming into force of the present Treaty, each one of the States to which territory of the former Austro-Hungarian Monarchy is transferred, and each one of the States arising from the dismemberment of that Monarchy, including Austria and the present Hungary, shall, if it has not already done so, stamp with the stamp of its own Government the currency notes of the Austro-Hungarian Bank existing in its territory.

2. Within twelve months of the coming into force of the present Treaty, each one of the States to which territory of the former Austro-Hungarian Monarchy is transferred, and each one of the States arising from the dismemberment of that Monarchy, including Austria and the present Hungary, shall replace, as it may think fit, the stamped notes referred to above by its own or a new currency.

3. The Governments of such States as have already converted the currency notes of the Austro-Hungarian Bank by stamping or by the issue of their own or a new currency, and in carrying out this operation have withdrawn, without stamping them, a portion or all of the currency notes circulating in their territory, shall either stamp the notes so withdrawn or hold them at the disposal of the Reparation Commission.

4. Within fourteen months of the coming into force of the present Treaty, those Governments which have replaced notes of the bank by their own or new currency, in accordance with the provisions of this Article, shall transfer to the Reparation Commission all the notes, stamped or unstamped, of the bank which have been withdrawn in the course of this replacement.

5. All notes transferred to the Reparation Commission under the provisions of this Article shall be dealt with by that Commission in accordance with the provisions of the Annex hereto.

6. The Austro-Hungarian Bank shall be liquidated as from the day succeeding the day of the signature of this Treaty.

7. The liquidation shall be conducted by receivers specially appointed for that purpose by the Reparation Commission. In conducting the liquidation of the bank, the receivers shall follow the rules laid down in the Statutes or other valid instruments regulating the constitution of the bank, subject however to the special provisions of this Article. In the case of any doubt arising as to the interpretation of the rules concerning the liquidation of the bank, whether laid down in these Articles and Annexes or in the Statutes of the bank, the decision of the Reparation Commission or any arbitrator appointed by it for that purpose shall be final.

8. The currency notes issued by the bank subsequent to October 27, 1918, shall have a claim on the securities issued by the Austrian and Hungarian Governments, both former and existing, and deposited with the bank by those Governments as security for these notes, but they shall not have a claim on any other assets of the bank.

9. The currency notes issued by the bank on or prior to October 27, 1918, (in so far as they are entitled to rank at all in conformity with these Articles), shall all rank equally as claims against all the assets of the bank, other than the Austrian and Hungarian Government securities deposited as security for the various note issues.

10. The securities deposited by the Austrian and Hungarian Governments, both former and existing, with the bank as security for the currency notes issued on or prior to October 27, 1918, shall be cancelled in so far as they represent the notes converted in the territory of the former Austro-Hungarian Monarchy as it existed on July 28, 1914, by States to which territory of that Monarchy is transferred or by States arising from the dismemberment of that Monarchy, including Austria and the present Hungary.

11. The remainder of the securities deposited by the Austrian and Hungarian Governments, both former and existing, with the bank as security for the currency notes issued on or prior to October 27, 1918, shall be retained in force as security for, and in so far as they represent, the notes issued on or prior to October 27, 1918, which on June 15, 1919, were outside the limits of the former Austro-Hungarian Monarchy as it existed on July 28, 1914, that is to say, firstly, all notes of this description which are presented to the Reparation Commission in accordance with paragraph 4 of this Article, and secondly all notes of this description which may be held elsewhere and are presented to the receivers of the bank in accordance with the Annex hereto.

12. No claims on account of any currency notes issued on or prior to October 27, 1918, shall rank either against the general assets of the bank or against the securities deposited by the Austrian and Hungarian Governments, both former and existing, as security for the notes, and any balance of such securities remaining after the amount of securities mentioned in paragraphs 10 and 11 has been calculated and deducted shall be cancelled.

13. All securities deposited by the Austrian and Hungarian Governments, both former and existing, with the bank as security for currency note issues and which are maintained in force shall be the obligations respectively of the Governments of Austria and the present Hungary only and not of any other States.

14. The holders of currency notes of the Austro-Hungarian Bank shall have no recourse against the Governments of Austria or the present Hungary or any other Goverment in respect of any loss which they may suffer as the result of the liquidation of the bank.

ANNEX.

1. The respective Governments, when transmitting to the Reparation Commission all the currency notes of the Austro-Hungarian Bank withdrawn by them from circulation in accordance with the terms of Article 206, shall also deliver to the Commission all the records showing the nature and amounts of the conversions which they have effected.

2. The Reparation Commission, after examining the records, shall deliver to the said Governments separate certificates stating the total amount of currency notes which the Government has converted:

(*a*) within the limits of the former Austro-Hungarian Monarchy as they existed on July 28, 1914;

(*b*) elsewhere.

These certificates will entitle the bearer to lodge a claim with the receivers of the bank for currency notes thus converted which are entitled to share in the assets of the bank.

3. After the liquidation of the bank is completed, the Reparation Commission shall destroy the notes thus withdrawn.

4. No notes issued on or prior to October 27, 1918, wherever they may be held, will rank as claims against the bank unless they are presented through the Government of the country in which they are held.

Article 207.— Each one of the States to which territory of the former Austro-Hungarian Monarchy is transferred, and each one of the States arising from the dismemberment of that Monarchy, including Austria, shall deal as it thinks fit with the petty or token coinage of the former Austro-Hungarian Monarchy existing in its territory.

No such State shall have any recourse under any circumstances, on behalf either of itself or of its nationals, against any other State with regard to such petty or token coinage.

Article 208.— States to which territory of the former Austro-Hungarian Monarchy is transferred and States arising from the dismemberment of that Monarchy shall acquire all property and possessions situated within their territories belonging to the former or existing Austrian Government.

For the purposes of this Article, the property and possessions of the former or existing Austrian Government shall be deemed to include the property of the former Austrian Empire and the interests of that Empire in the joint property of the Austro-Hungarian Monarchy, as well as all the property of the Crown, and the private property of members of the former Royal Family of Austria-Hungary.

These States shall, however, have no claim to any property of the former or existing Government of Austria situated outside their own respective territories.

The value of such property and possessions acquired by States other than Austria shall be fixed by the Reparation Commission and placed by that Commission to the credit of Austria and to the debit of the State acquiring such property on account of the sums due for reparation. The Reparation Commission shall deduct from the value of the public property thus acquired an amount proportionate to the contribution in money, land or material made directly by any province or commune or other autonomous local authority towards the cost of such property.

Without prejudice to Article 203 relating to secured Debt, in the case of each State acquiring property under the provisions of this Article, the amount placed to the credit of Austria and to the debit of the said State in accordance with the preceding paragraph shall be

reduced by the value of the amount of the liability in respect of the unsecured Debt of the former Austrian Government assumed by that State under the provisions of Article 203 which, in the opinion of the Reparation Commission, represents expenditure upon the property so acquired. The value shall be fixed by the Reparation Commission on such basis as the Commission may consider equitable.

Property of the former and existing Austrian Governments shall be deemed to include a share of the real property in Bosnia-Herzegovina of all descriptions for which, under Article 5 of the Convention of February 26, 1909, the Government of the former Austro-Hungarian Monarchy paid £ T. 2,500,000 to the Ottoman Government. Such share shall be proportionate to the share which the former Austrian Empire contributed to the above payment, and the value of this share, as assessed by the Reparation Commission, shall be credited to Austria on account of reparation.

As exception to the above there shall be transferred without payment:

(1) The property and possessions of provinces, communes and other local autonomous institutions of the former Austro-Hungarian Monarchy, including those in Bosnia-Herzegovina which did not belong to the former Austro-Hungarian Monarchy;

(2) Schools and hospitals the property of the former Austro-Hungarian Monarchy;

(3) Forests which belonged to the former Kingdom of Poland.

Further, any building or other property situated in the respective territories transferred to the States referred to in the first paragraph whose principal value lies in its historic interest and associations, and which formerly belonged to the Kingdom of Bohemia, the Kingdom of Poland, the Kingdom of Croatia-Slavonia-Dalmatia, Bosnia-Herzegovina, the Republic of Ragusa, the Venetian Republic or the Episcopal Principalities of Trient and Bressanone, may, subject to the approval of the Reparation Commission, be transferred to the Government entitled thereto without payment.

Article 209.— Austria renounces, so far as she is concerned, all rights accorded to her or her nationals by Treaties, Conventions or Agreements, of whatsoever kind, to representation upon or participation in the control or administration of Commissions, State Banks, Agencies or other financial or economic organisations of an international character exercising powers of control or administration and operating in any of the Allied or Associated States, or in Germany, Hungary, Bulgaria or Turkey, or in the dependencies of these States, or in the former Russian Empire.

Article 210.— 1. The Austrian Government agrees to deliver within one month from the coming into force of the present Treaty to such authority as the Principal Allied and Associated Powers may designate the sum in gold deposited in the Austro-Hungarian Bank in the name of the Council of the Administration of the Ottoman Public Debt as security for the first issue of Turkish Government currency notes.

2. Without prejudice to Article 244 of Part X of the present Treaty, Austria renounces so far as she is concerned any benefit disclosed by the Treaties of Bucharest and Brest-Litovsk and by the Treaties supplementary thereto.

Austria undertakes to transfer either to Roumania or to the Principal Allied and Associated Powers, as the case may be, all monetary instruments, specie, securities and negotiable instruments or goods which she has received under the aforesaid Treaties.

3. The sums of money and all securities, instruments and goods, of whatsoever nature, to be delivered, paid or transferred under the provisions of this Article, shall be disposed of by the Principal Allied and Associated Powers in a manner hereafter to be determined by those Powers.

4. Austria recognises any transfer of gold provided for by Article 259 (5) of the Treaty of Peace concluded at Versailles on June 28, 1919, between the Allied and Associated Powers and Germany, and any transfer of claims provided for by Article 261 of that Treaty.

Article 211.— Without prejudice to the renunciation of any rights by Austria on behalf of herself or of her nationals in the other provisions of the present Treaty, the Reparation Commission may, within one year from the coming into force of the present Treaty, demand that Austria become possessed of any rights and interests of her nationals in any public utility undertaking or in any concession operating in Russia, Turkey, Germany, Hungary or Bulgaria, or in the possessions or dependencies of these States, or in any territory formerly belonging to Austria or her allies to be transferred by Austria or her allies to any State, or to be administered by a mandatory under any Treaty entered into with the Allied and Associated Powers, and may require that the Austrian Government transfer, within six months of the date of demand, to the Reparation Commission all such rights and interests and any similar rights and interests owned by the former or existing Austrian Government.

Austria shall be responsible for indemnifying her nationals so dispossessed, and the Reparation Commission shall credit Austria on account of sums due for reparation with such sums in respect of the value of the transferred rights and interests as may be assessed by the Reparation Commission, and the Austrian Government shall, within six months from the coming into force of the present Treaty, communicate to the Reparation Commission all such rights and interests, whether already granted, contingent or not yet exercised, and shall renounce on behalf of itself and its nationals in favour of the Allied and Associated Powers all such rights and interests which have not been so communicated.

Article 212.— The Austrian Government undertakes to refrain from preventing or impeding such acquisition by the German, Hungarian, Bulgarian or Turkish Governments of any rights and interests of German, Hungarian, Bulgarian or Turkish nationals in public utility undertakings or concessions operating in Austria as may be required by the Reparation Commission under the terms of the Treaties of Peace or supplementary Treaties or Conventions concluded between the Allied and Associated Powers and the German, Hungarian, Bulgarian or Turkish Governments respectively.

Article 213.— Austria undertakes to transfer to the Allied and Associated Powers all claims in favour of the former or existing Austrian Governments to payment or reparation by the Governments of Germany, Hungary, Bulgaria or Turkey, and in particular all claims which may arise now or hereafter in the fulfillment of undertakings made after July 28, 1914, until the coming into force of the present Treaty.

The value of such claims shall be assessed by the Reparation Commission, and shall be transferred to the Reparation Commission for the credit of Austria on account of the sums due for reparation.

Article 214.— Any monetary obligation arising out of the present Treaty and expressed in terms of gold kronen shall, unless some other arrangement is specifically provided for in any particular case under the terms of this Treaty or conventions supplementary thereto, be payable at the option of the creditors in pounds sterling payable in London, gold dollars of the United States of America payable in New York, gold francs payable in Paris, or gold lire payable in Rome.

For the purposes of this Article, the gold coins mentioned above shall be defined as being of the weight and fineness of gold as enacted by law on January 1, 1914.

Article 215.— Any financial adjustments, such as those relating to any banking and insurance companies, savings banks, postal savings banks, land banks, mortgage companies or other similar institutions, operating within the territory of the former Austro-Hungarian Monarchy, necessitated by the partition of that Monarchy and the resettlement of public debts and currency provided for by these Articles, shall be regulated by agreement between the various Governments concerned in such a manner as shall best secure equitable treatment to all the parties interested. In case the Governments concerned are unable to come to an agreement on any question arising out of this financial adjustment, or in case any Government is of opinion that its nationals have not received equitable treatment, the Reparation Commission shall, on the application of any one of the Governments concerned, appoint an arbitrator or arbitrators, whose decision shall be final.

Article 216.— The Government of Austria shall be under no liability in respect of civil or military pensions granted to nationals of the former Austrian Empire who have been recognised as nationals or other States or who become so under the provisions of the present Treaty.

PART X.— ECONOMIC CLAUSES.

SECTION I.— COMMERCIAL RELATIONS.

Chapter I.— Customs, Regulations, Duties and Restrictions.

Article 217.— Austria undertakes that goods the produce or manufacture of any one of the Allied or Associated States imported into Austrian territory, from whatsoever place arriving, shall not be subjected to other or higher duties or charges (including internal charges) than those to which the like goods the produce or manufacture of any other such State or of any other foreign country are subject.

Austria will not maintain or impose any prohibition or restriction on the importation into Austrian territory

of any goods the produce or manufacture of the territories of any one of the Allied or Associated States, from whatsoever place arriving, which shall not equally extend to the importation of the like goods the produce or manufacture of any other such State or of any foreign country.

Article 218.—Austria further undertakes that, in the matter of the régime applicable on importation, no discrimination against the commerce of any of the Allied and Associated States as compared with any other of the said States or any other foreign country shall be made, even by indirect means, such as customs regulations or procedure, methods of verification or analysis conditions of payment of duties, tariff classification or interpretation, or the operation of monopolies.

Article 219.— In all that concerns exportation, Austria undertakes that goods, natural products or manufactured articles, exported from Austrian territory to the territories of any one of the Allied or Associated States, shall not be subjected to other or higher duties or charges (including internal charges) than those paid on the like goods exported to any other State or to any other foreign country.

Austria will not maintain or impose any prohibition or restriction on the exportation of any goods sent from her territory to any one of the Allied or Associated States which shall not equally extend to the exportation of the like goods, natural products or manufactured articles, sent to any other such State or to any other foreign country.

Article 220.— Every favour, immunity, or privilege in regard to the importation, exportation or transit of goods granted by Austria to any Allied or Associated States or to any other foreign country whatever shall simultaneously and unconditionally, without request and without compensation, be extended to all the Allied and Associated States.

Article 221.— By way of exception to the provisions of Article 286 of Part XII (Ports, Waterways and Railways), products in transit by the ports which before the war were situated in territory of the former Austro-Hungarian Monarchy shall, for a period of three years from the coming into force of the present Treaty, enjoy on importation into Austria reductions of duty corresponding with and in proportion of those applied to such products under the Austro-Hungarian Customs Tariff of February 13, 1906, when imported by such ports.

Article 222.— Notwithstanding the provisions of Articles 217 and 220, the Allied and Associated Powers agree that they will not invoke these provisions to secure the advantage of any arrangements which may be made by the Austrian Government with the Governments of Hungary or of the Czecho-Slovak State for the accord of a special customs régime to certain natural or manufactured products which both originate in and come from those countries, and which shall be specified in the arrangements, provided that the duration of these arrangements does not exceed a period of five years from the coming into force of the present Treaty.

Article 223.— During the first six months after the coming into force of the present Treaty, the duties imposed by Austria on imports from Allied and Associated States shall not be higher than the most favourable duties which were applied to imports into the former Austro-Hungarian Monarchy on July 28, 1914.

During a further period of thirty months after the expiration of the first six months this provision shall continue to be applied exclusively with regard to the importation of fruits (fresh and dried), fresh vegetables, olive oil, eggs, pigs and pork products, and live poultry, in so far as such products enjoyed at the above mentioned date (July 28, 1914) rates conventionalised by Treaties with the Allied or Associated Powers.

Article 224.— (1) The Czecho-Slovak State and Poland undertake that for a period of fifteen years from the coming into force of the present Treaty they will not impose on the exportation to Austria of the products of coal mines in their territories any export duties or other charges or restrictions on exportation different from or more onerous than those imposed on such exportation to any other country.

(2) Special agreements shall be made between Poland and the Czecho-Slovak State and Austria as to the supply of coal and of raw materials reciprocally.

(3) Pending the conclusion of such agreements, but in no case during more than three years from the coming into force of the present Treaty, the Czecho-Slovak State and Poland undertake that no export duty or other restrictions of any kind shall be imposed on the export to Austria of coal or lignite up to a reasonable quantity to be fixed, failing agreement between the States concerned, by the Reparation Commission. In fixing this quantity the Reparation Commission shall take into account all the circumstances, including the quantities both of coal and of lignite supplied before the war to present Austrian territory from Upper Silesia and from the territory of the former Austrian Empire transferred to the Czecho-Slovak State and Poland in accordance with the present Treaty, and the quantities now available for export from those countries. Austria shall in return furnish to the Czecho-Slovak State and Poland supplies of the raw materials referred to in paragraph (2) in accordance with the decisions of the Reparation Commission.

(4) The Czecho-Slovak State and Poland further undertake during the same period to take such steps as may be necessary to ensure that any such products shall be available for sale to purchasers in Austria on terms as favourable as are applicable to like products sold under similar conditions to purchasers in the Czecho-Slovak State or Poland respectively or in any other country.

(5) In case of disagreement in the execution or interpretation of any of the above provisions the Reparation Commission shall decide.

Chapter II.— Shipping.

Article 225.— The High Contracting Parties agree to recognise the flag flown by the vessels of any Contracting Party having no seacoast, which are registered at some one specified place situated in its territory; such place shall serve as the port of registry of such vessels.

Chapter III.— Unfair Competition.

Article 226.— Austria undertakes to adopt all the necessary legislative and administrative measures to protect goods the produce or manufacture of any one of the Allied and Associated Powers from all forms of unfair competition in commercial transactions.

Austria undertakes to prohibit and repress by seizure and by other appropriate remedies the importation, exportation, manufacture, distribution, sale or offering for sale in her territory of all goods bearing upon themselves or their usual get-up or wrappings any marks, names, devices, or descriptions whatsoever which are calculated to convey directly or indirectly a false indication of the origin, type, nature or special characteristics of such goods.

Article 227.— Austria undertakes, on condition that reciprocity is accorded in these matters, to respect any law, or any administrative or judicial decision given in conformity with such law, in force in any Allied or Associated State and duly communicated to her by the proper authorities, defining or regulating the right to any regional appellation in respect of wine or spirits produced in the State to which the region belongs or the conditions under which the use of any such appellation may be permitted; and the importation, exportation, manufacture, distribution, sale or offering for sale of products or articles bearing regional appellations inconsistent with such law or order shall be prohibited by the Austrian Government and repressed by the measures prescribed in the preceding Article.

Chapter IV.— Treatment of Nationals of Allied and Associated Powers.

Article 228.— Austria undertakes:—

(*a*) not to subject the nationals of the Allied and Associated Powers to any prohibition in regard to the exercise of occupations, professions, trade and industry, which shall not be equally applicable to all aliens without exception;

(*b*) not to subject the nationals of the Allied and Associated Powers in regard to the rights referred to in paragraph (*a*) to any regulation or restriction which might contravene directly or indirectly the stipulations of the said paragraph, or which shall be other or more disadvantageous than those which are applicable to nationals of the most favoured nation;

(*c*) not to subject the nationals of the Allied and Associated Powers, their property, rights or interests, including companies and associations in which they are interested, to any charge, tax or impost, direct or indirect, other or higher than those which are or may be imposed on her own nationals or their property, rights or interests;

(*d*) not to subject the nationals of any one of the Allied or Associated Powers to any restriction which was not applicable on July 1, 1914, to the nationals of such Powers unless such restriction is likewise imposed on her own nationals.

Article 229.— The nationals of the Allied and Associated Powers shall enjoy in Austrian territory a constant protection for their persons and for their property, rights and interests, and shall have free access to the courts of law.

Article 230.— Austria undertakes to recognise any new nationality which has been or may be acquired by

her nationals under the laws of the Allied and Associated Powers, and in accordance with the decisions of the competent authorities of these Powers pursuant to naturalisation laws or under treaty stipulations, and to regard such persons as having, in consequence of the acquisition of such new nationality, in all respects severed their allegiance to their country of origin.

Article 231.— The Allied and Associated Powers may appoint consuls-general, consuls, vice-consuls and consular agents in Austrian towns and ports. Austria undertakes to approve the designation of the consuls-general, consuls, vice-consuls and consular agents, whose names shall be notified to her, and to admit them to the exercise of their functions in conformity with the usual rules and customs.

Chapter V.— General Articles.

Article 232.— The obligations imposed by Austria by Chapter I above shall cease to have effect five years from the date of the coming into force of the present Treaty, unless otherwise provided in the text, or unless the Council of the League of Nations shall, at least twelve months before the expiration of that period, decide that these obligations shall be maintained for a further period with or without amendment.

Nevertheless it is agreed that unless the League of Nations decides otherwise an Allied or Associated Power shall not after the expiration of three years from the coming into force of the present Treaty be entitled to require the fulfilment by Austria of the provisions of Article 217, 218, 219 or 220 unless that Power accords correlative treatment to Austria.

Article 228 of Chapter IV shall remain in operation, with or without amendment, after the period of five years for such further period, if any, not exceeding five years, as may be determined by a majority of the Council of the League of Nations.

Article 233.— If the Austrian Government engages in international trade, it shall not in respect thereof have or be deemed to have any rights, privileges or immunities of sovereignty.

SECTION II.— TREATIES.

Article 234.— From the coming into force of the present Treaty and subject to the provisions thereof the multilateral Treaties, Conventions and Agreements of an economic or technical character concluded by the former Austro-Hungarian Monarchy and enumerated below and in the subsequent Articles shall alone be applied as between Austria and those of the Allied and Associated Powers party thereto:

(1) Conventions of March 14, 1884, December 1, 1886, and March 23, 1887, and Final Protocol of July 7, 1887, regarding the protection of submarine cables.

(2) Convention of October 11, 1909, regarding the international circulation of motor-cars.

(3) Agreement of May 15, 1886, regarding the sealing of railway trucks subject to customs inspection, and Protocol of May 18, 1907.

(4) Agreement of May 15, 1886, regarding the technical standardisation of railways.

(5) Convention of July 5, 1890, regarding the publication of customs tariffs and the organisation of an international Union for the publication of customs tariffs.

(6) Convention of April 25, 1907, regarding the raising of the Turkish customs tariff.

(7) Convention of March 14, 1857, for the redemption of toll dues on the Sound and Belts.

(8) Convention of June 22, 1861, for the redemption of the Stade Toll on the Elbe.

(9) Convention of July 16, 1863, for the redemption of the Toll dues on the Scheldt.

(10) Convention of October 29, 1888, regarding the establishment of a definite arrangement guaranteeing the free use of the Suez Canal.

(11) Conventions of September 23, 1910, respecting the unification of certain regulations regarding collisions and salvage at sea.

(12) Convention of December 21, 1904, regarding the exemption of hospital ships from dues and charges in ports.

(13) Convention of September 26, 1906, for the suppression of nightwork for women.

(14) Conventions of May 18, 1904, and May 4, 1910, regarding the suppression of the White Slave Traffic.

(15) Convention of May 4, 1910, regarding the suppression of obscene publications.

(16) Sanitary Convention of December 3, 1903, and the preceding Conventions signed on January 30, 1892, April 15, 1893, April 3, 1894, and March 19, 1897.

(17) Convention of May 20, 1875, regarding the unification and improvement of the metric system.

(18) Convention of November 29, 1906, regarding the unification of pharmacopœial formulæ for potent drugs.

(19) Convention of November 16 and 19, 1885, regarding the establishment of a concert pitch.

(20) Convention of June 7, 1905, regarding the creation of an International Agricultural Institute at Rome.

(21) Conventions of November 3, 1881, and April 15, 1889, regarding precautionary measures against phylloxera.

(22) Convention of March 19, 1902, regarding the protection of birds useful to agriculture.

(23) Convention of June 12, 1902, regarding the guardianship of minors.

Article 235.— From the coming into force of the present Treaty the High Contracting Parties shall apply the conventions and agreements hereinafter mentioned, in so far as concerns them, Austria undertaking to comply with the special stipulations contained in this Article.

Postal Conventions.

Conventions and agreements of the Universal Postal Union concluded at Vienna, July 4, 1891.

Conventions and Agreements of the Postal Union signed at Washington, June 15, 1897.

Conventions and Agreements of the Postal Union signed at Rome, May 26, 1906.

Telegraphic Conventions.

International Telegraphic Conventions signed at St. Petersburg July 10/22, 1875.

Regulations and Tariffs drawn up by the International Telegraphic Conference, Lisbon, June 11, 1908.

Austria undertakes not to refuse her assent to the conclusion by the new States of the special arrangements referred to in the Conventions and Agreements relating to the Universal Postal Union and to the International Telegraphic Union, to which the said new States have adhered or may adhere.

Articles 236–247 are identical with Articles 284–295 inclusive of the German Treaty with the exception that the words Austria, Austro-Hungarian Monarchy are substituted for the words Germany, etc., in the latter treaty.

SECTION III.— DEBTS.

Article 248 with Annex is the same as Article 296 and Annex of German Treaty with the exception that the words Austria, Austrian, are substituted for Germany, German, etc., of the latter.

SECTION IV.— PROPERTY, RIGHTS AND INTERESTS.

Articles 249–250 with Annex are identical with Articles 297 and 298 and Annex to the latter of German Treaty with the exception that the words Austria, Austrian are substituted for Germany, German, etc.

SECTION V.— CONTRACTS, PRESCRIPTIONS, JUDGMENTS.

Articles 251–255 inclusive are identical with Articles 299–303 with Annex of German Treaty with the exception of the substitution of the word Austria for Germany, etc.

SECTION VI.— MIXED ARBITRAL TRIBUNAL.

Articles 256–257 inclusive are identical with Articles 304–305 of the German Treaty with the exception of the usual substitution of the word Austria for Germany.

SECTION VII.— INDUSTRIAL PROPERTY.

Articles 258–262 of this Treaty are identical with Articles 306–310 inclusive of the German Treaty with the exception that the words Austria, Austrian, etc., are substituted for the words Germany, German, etc.

SECTION VIII.— SPECIAL PROVISIONS RELATING TO TRANSFERRED TERRITORY.

Article 263.— Of the individuals and juridical persons previously nationals of the former Austrian Empire, including Bosnia-Herzegovinians, those who acquire *ipso facto* under the present Treaty the nationality of an Allied or Associated Power are designated in the provisions which follow by the expression "nationals of the former Austrian Empire"; the remainder are designated by the expression "Austrian nationals."

Article 264.— The inhabitants of territories transferred by virtue of the present Treaty shall, notwithstanding this transfer and the change of nationality consequent thereon, continue to enjoy in Austria all the rights in industrial, literary and artistic property to which they were entitled under the legislation in force at the time of the transfer.

Article 265.— The questions concerning the nationals of the former Austrian Empire, as well as Austrian nationals, their rights, privileges and property, which are not dealt with in the present Treaty, or in the Treaty prepared for the purpose of regulating certain immediate relations between the States to which territory of the former Austro-Hungarian Monarchy has been transferred, or arising from the dismemberment of that Monarchy, shall form the subject of special conventions between the States concerned, including Austria; such conventions shall not in any way conflict with the provisions of the present Treaty. For this purpose it is agreed that three months from the coming into force of the present Treaty a Conference of delegates of the States in question shall take place.

Article 266.— The Austrian Government shall without delay restore to nationals of the former Austrian Empire their property, rights and interests situated in Austrian territory.

The amount of taxes and imposts on capital which have been levied or increased on the property, rights and interests of nationals of the former Austrian Empire since November 3, 1918, or which shall be levied or increased until restitution in accordance with the provisions of the present Treaty, or, in the case of property, rights and interests which have not been subjected to exceptional measures of war, until three months from the coming into force of the present Treaty, shall be returned to the owners.

The property, rights, and interests restored shall not be subject to any tax levied in respect of any other property or any other business owned by the same person after such property had been removed from Austria, or such business had ceased to be carried on therein. If taxes of any kind have been paid in anticipation in respect of property, rights and interests removed from Austria, the proportion of such taxes paid for any period subsequent to the removal of the property, rights and interests in question shall be returned to the owners.

Cash assets shall be paid in the currency and at the rate of exchange provided for the case of debts under Articles 248 (*d*) and 271.

Legacies, donations and funds given or established in the former Austro-Hungarian Monarchy for the benefit of nationals of the former Austrian Empire shall be placed by Austria, so far as the funds in question are in her territory, at the disposition of the Allied or Associated Power of which the persons in question are now nationals, in the condition in which these funds were on July 28, 1914, taking account of payments properly made for the purpose of the Trust.

Article 267.— Notwithstanding the provisions of Article 249 and the Annex to Section IV the property, rights and interests of Austrian nationals or companies controlled by them situated in the territories which formed part of the former Austro-Hungarian Monarchy shall not be subject to retention or liquidation in accordance with these provisions. Such property, rights and interests shall be restored to their owners freed from any measure of this kind, or from any other measure of transfer, compulsory administration or sequestration, taken since November 3, 1918, until the coming into force of the present Treaty, in the condition in which they were before the application of the measures in question.

The property, rights and interests here referred to do not include property which is the subject of Article 208 of Part IX (Financial Clauses).

Nothing in this Article shall affect the provisions laid down in Part VIII (Reparation), Section I, Annex III, as the property of Austrian nationals in ships and boats.

Article 268.— All contracts for the sale of goods for delivery by sea concluded before January 1, 1917, between nationals of the former Austrian Empire on the one part and the administrations of the former Austro-Hungarian Monarchy, Austria, or Bosnia-Herzegovina, or Austrian nationals of the other part shall be annulled, except in respect of any debt or other pecuniary obligation arising out of any act done or money paid thereunder. All other contracts between such parties which were made before November 1, 1918, and were in force at that date shall be maintained.

Article 269.— With regard to prescriptions, limitations, and forfeitures in the transferred territories, the provisions of Articles 252 and 253 shall be applied with substitution for the expression "outbreak of war" of the expression "date, which shall be fixed by administrative decision of each Allied or Associated Power, at which relations between the parties became impossible in fact or in law," and for the expression "duration of the war" of the expression "period between the date above indicated and that of the coming into force of the present Treaty."

Article 270.— Austria undertakes not to impede in any way the transfer of property, rights or interests belonging to a company incorporated in accordance with the laws of the former Austro-Hungarian Monarchy, in which Allied or Associated nationals are interested, to a company incorporated in accordance with the laws of any other power, to facilitate all measures necessary for giving effect to such transfer, and to render any assistance which may be required for effecting the restoration to Allied or Associated nationals, or to companies in which they are interested, of their property, rights or interests whether in Austria or in transferred territory.

Article 271.— Section III, except Article 248 (*d*) shall not apply to debts contracted between Austrian nationals and nationals of the former Austrian Empire.

Subject to the special provisions laid down in Article 248 (*d*) for the case of the new States, these debts shall be paid in the legal currency at the time of payment of the State of which the national of the former Austrian Empire has become a national, and the rate of exchange applicable shall be the average rate quoted on the Geneva Exchange during the two months preceding November 1, 1918.

Article 272.— Insurance companies whose principal place of business was in territory which previously formed part of the former Austro-Hungarian Monarchy shall have the right to carry on their business in Austrian territory for a period of ten years from the coming into force of the present Treaty, without the rights which they previously enjoyed being affected in any way by the change of nationality.

During the above period the operations of such companies shall not be subjected by Austria to any higher tax or charge than shall be imposed on the operations of national companies. No measure in derogation of their rights of property shall be imposed upon them which is not equally applied to the property, rights or interests of Austrian insurance companies; adequate compensation shall be paid in the event of the application of any such measures.

These provisions shall only apply so long as Austrian insurance companies previously carrying on business in the transferred territories, even if their principal place of business was outside such territories, are reciprocally accorded a similar right to carry on their business therein.

After the period of ten years above referred to, the provisions of Article 228 of this Part of the present Treaty shall apply in regard to the Allied and Associated companies in question.

Article 273.— Special agreements will determine the division of the property of associations or public corporations carrying on their functions in territory which is divided in consequence of the present Treaty.

Article 274.— A special convention shall determine all questions relative to the records, registers and copies in connection with the protection of industrial, literary or artistic property, and fix their eventual transmission or communication by the Offices of the former Austro-Hungarian Monarchy to the Offices of the States to which are transferred territory of the said Monarchy and to the Offices of new States.

States to which territory of the former Austro-Hungarian Monarchy is transferred, and States arising from the dismemberment of that Monarchy, shall recognize and give effect to rights of industrial, literary and artistic property in force in the territory at the time when it passes to the State in question, or re-established or restored in accordance with the provisions of Article 258. These rights shall remain in force in that territory for the same period as that for which they would have remained in force under the law of the former Austro-Hungarian Monarchy.

Article 275.— Without prejudice to other provisions of the present Treaty, the Austrian Government undertakes so far as it is concerned to hand over to any Power to which territory of the former Austro-Hungarian Monarchy is transferred, or which arises from the dismemberment of that Monarchy, such portion of the reserves accumulated by the Governments or the administrations of the former Austro-Hungarian Monarchy, or by public or private organisations under their control, as is attributable to the carrying on of Social or State Insurance in such territory.

The Powers to which these funds are handed over must apply them to the performance of the obligations arising from such insurances.

The conditions of the delivery will be determined by special conventions to be concluded between the Austrian Government and the Governments concerned.

In case these special conventions are not concluded in accordance with the above paragraph within three months after the coming into force of the present Treaty, the conditions of transfer shall in each case be referred to a Commission of five members, one of

whom shall be appointed by the Austrian Government, one by the other interested Government and three by the Governing Body of the International Labour Office from the nationals of other States. This Commission shall by majority vote within three months after appointment adopt recommendations for submission to the Council of the League of Nations, and the decisions of the Council shall forthwith be accepted as final by Austria and the other Government concerned.

PART XI.—AERIAL NAVIGATION.

Articles 276–283 inclusive of this Treaty are identical with Articles 313–320 inclusive of the German Treaty, with the exception that the words Austria, Austrian, etc., take the place of the words Germany, German, etc.

PART XII.— PORTS, WATERWAYS AND RAILWAYS.

SECTION I.—GENERAL PROVISIONS.

Articles 284–289 inclusive are identical with Articles 321–326 of the German Treaty, with the exception that the word Austria is substituted for Germany, etc.

SECTION II.— NAVIGATION.

Chapter I.—Freedom of Navigation.

Article 290.— The nationals of any of the Allied and Associated Powers as well as their vessels and property shall enjoy in all Austrian ports and on the inland navigation routes of Austria the same treatment in all respects as Austrian nationals, vessels and property.

In particular the vessels of any one of the Allied or Associated Powers shall be entitled to transport goods of any description, and passengers, to or from any ports or places in Austrian territory to wnich Austrian vessels may have access, under conditions which shall not be more onerous than those applied in the case of national vessels; they shall be treated on a footing of equality with national vessels as regards port and harbour facilities and charges of every description, including facilities for stationing, loading and unloading, and duties and charges of tonnage, harbour, pilotage, lighthouse, quarantine, and all analogous duties and charges of whatsoever nature, levied in the name of or for the profit of the Government; public functionaries, private individuals, corporations or establishments of any kind.

In the event of Austria granting a preferential régime to any of the Allied or Associated Powers or to any other foreign Power, this régime shall be extended immediately and unconditionally to all the Allied and Associated Powers.

There shall be no impediment to the movement of persons or vessels other than those arising from prescriptions concerning customs, police, sanitation, emigration and immigration, and those relating to the import and export of prohibited goods. Such regulations must be reasonable and uniform and must not impede traffic unnecessarily.

Chapter II.—Clauses Relating to the Danube.

1. General Clauses Relating to River Systems Declared International.

Article 291.— The following river is declared international: the Danube from Ulm; together with all navigable parts of this river system which naturally provide more than one State with access to the sea, with or without transhipment from one vessel to another, as well as the portion of the course of the Morava (March) and the Thaya (Theiss) forming the frontier between Czecho-Slovakia and Austria, and lateral canals and channels constructed either to duplicate or to improve naturally navigable sections of the specified river system or to connect two naturally navigable sections of the same river.

The same shall apply to the Rhine-Danube navigable waterway, should such a waterway be constructed, under the conditions laid down in Article 308.

Any part of the above-mentioned river system which is not included in the general definition may be declared international by an agreement between the riparian States.

Article 292.— On the waterways declared to be international in the preceding Article, the nationals, property and flags of all Powers shall be treated on a footing of perfect equality, no distinction being made to the detriment of the nationals, property or flag of any Power between them and the nationals, property or flag of the riparian State itself or of the most favoured nation.

Article 293.— Austrian vessels shall not be entitled to carry passengers or goods by regular services between the ports of any Allied or Associated Power, without special authority from such Power.

Article 294.— Where such charges are not precluded by any existing convention, charges varying on different sections of a river may be levied on vessels using the navigable channels or their approaches, provided that they are intended solely to cover equitably the cost of maintaining in a navigable condition, or of improving, the river and its approaches, or to meet expenditure incurred in the interests of navigation. The schedule of such charges shall be calculated on the basis of such expenditure and shall be posted up in the ports. These charges shall be levied in such a manner as to render any detailed examination of cargoes unnecessary, except in cases of suspected fraud or contravention.

Article 295.— The transit of vessels, passengers and goods on these waterways shall be effected in accordance with the general conditions prescribed for transit in Section I above.

When the two banks of an international river are within the same State goods in transit may be placed under seal or in the custody of customs agents. When the river forms a frontier goods and passengers in transit shall be exempt from all customs formalities, the loading and unloading of goods, and the embarkation and disembarkation of passengers, shall only take place in the ports specified by the riparian State.

Article 296.— No dues of any kind other than those provided for in this Part shall be levied along the course or at the mouth of these waterways.

This provision shall not prevent the fixing by the riparian States of customs, local octroi or consumption duties, or the creation of reasonable and uniform charges levied in the ports, in accordance with public tariffs, for the use of cranes, elevators, quays, warehouses, and other similar constructions.

Article 297.— In default of any special organisation for carrying out the works connected with the upkeep and improvement of the international portion of a navigable system, each riparian State shall be bound to take the necessary measures to remove any obstacle or danger to navigation and to ensure the maintenance of good conditions of navigation.

If a State neglects to comply with this obligation any riparian State, or any State represented on the International Commission, may appeal to the tribunal instituted for this purpose by the League of Nations.

Article 298.— The same procedure shall be followed in the case of a riparian State undertaking any works of a nature to impede navigation in the international section. The tribunal mentioned in the preceding Article shall be entitled to enforce the suspension or suppression of such works, making due allowance in its decisions for all rights in connection with irrigation, water-power, fisheries, and other national interests, which, with the consent of all the riparian States or of all the States represented on the International Commission, shall be given priority over the requirements of navigation.

Appeal to the tribunal of the League of Nations does not require the suspension of the works.

Article 299.— The régime set out in Articles 292 and 294 to 298 above shall be superseded by one to be laid down in a General Convention drawn up by the Allied and Associated Powers, and approved by the League of Nations, relating to the waterways recognised in such Convention as having an international character. This Convention shall apply in particular to the whole or part of the above-mentioned river system of the Danube, and such other parts of that river system as may be covered by a general definition.

Austria undertakes, in accordance with the provisions of Article 331, to adhere to the said General Convention.

Article 300.— Austria shall cede to the Allied and Associated Powers concerned, within a maximum period of three months from the date on which notification shall be given her, a proportion of the tugs and vessels remaining registered in the ports of the river system referred to in Article 291 after the deduction of those surrendered by way of restitution or reparation. Austria shall in the same way cede material of all kinds necessary to the Allied and Associated Powers concerned for the utilisation of that river system.

The number of the tugs and boats, and the amount of the material so ceded, and their distribution, shall be determined by an arbitrator or arbitrators nominated by the United States of America, due regard being had to the legitimate needs of the parties concerned, and particularly to the shipping traffic during the five years preceding the war.

All craft so ceded shall be provided with their fittings and gear, shall be in a good state of repair

and in condition to carry goods, and shall be selected from among those most recently built.

Wherever the cessions made under the present Article involve a change of ownership, the arbitrator or arbitrators shall determine the rights of the former owners as they stood on October 15, 1918, and the amount of the compensation to be paid to them, and shall also direct the manner in which such payment is to be effected in each case. If the arbitrator or arbitrators find that the whole or part of this sum will revert directly or indirectly to States from whom reparation is due, they shall decide the sum to be placed under this head to the credit of the said States.

As regards the Danube the arbitrator or arbitrators referred to in this Article will also decide all questions as to the permanent allocation and the conditions thereof of the vessels whose ownership or nationality is in dispute between States. Pending final allocation the control of these vessels shall be vested in a Commission consisting of Representatives of the United States of America, the British Empire, France and Italy, who will be empowered to make provisional arrangements for the working of these vessels in the general interest by any local organisation, or failing such arrangements by themselves, without prejudice to the final allocation.

As far as possible these provisional arrangements will be on a commercial basis, the net receipts by the Commission for the hire of these vessels being disposed of as directed by the Reparation Commission.

2. Special Clauses Relating to the Danube.

Article 301.— The European Commission of the Danube reassumes the powers it possessed before the war. Nevertheless, as a provisional measure only representatives of Great Britain, France, Italy and Roumania shall constitute this Commission.

Article 302.— From the point where the competence of the European Commission ceases, the Danube system referred to in Article 291 shall be placed under the administration of an International Commission composed as follows:

2 representatives of German riparian States;
1 representative of each other riparian State;
1 representative of each non-riparian State represented in the future on the European Commission of the Danube.

If certain of these representatives cannot be appointed at the time of the coming into force of the present Treaty, the decisions of the Commission shall nevertheless be valid.

Article 303.— The International Commission provided for in the preceding Article shall meet as soon as possible after the coming into force of the present Treaty, and shall undertake provisionally the administration of the river in conformity with the provisions of Articles 292 and 294 to 298, until such time as a definitive statute regarding the Danube is concluded by the Powers nominated by the Allied and Associated Powers.

The decisions of this International Commission shall be taken by a majority vote. The salaries of the Commissioners shall be fixed and paid by their respective countries.

As a provisional measure any deficit in the administrative expense of this International Commission shall be borne equally by the States represented on the Commission.

In particular this Commission shall regulate the licensing of pilots, charges for pilotage and the administration of the pilot service.

Article 304.— Austria agrees to accept the régime which shall be laid down for the Danube by a Conference of the Powers nominated by the Allied and Associated Powers, which shall meet within one year after the coming into force of the present Treaty, and at which Austrian representatives may be present.

Article 305.— The mandate given by Article 57 of the Treaty of Berlin of July 13, 1878, to Austria-Hungary, and transferred by her to Hungary, to carry out works at the Iron Gates, is abrogated. The Commission entrusted with the administration of this part of the river shall lay down provisions for the settlement of accounts subject to the financial provisions of the present Treaty. Charges which may be necessary shall in no case be levied by Hungary.

Article 306.— Should the Czecho-Slovak State, the Serb-Croat-Slovene Satte, or Roumania, with the authorisation of or under mandate from the International Commission, undertake maintenance, improvement, weir, or other works on a part of the river system which forms a frontier, these States shall enjoy on the opposite bank, and also on the part of the bed which is outside their territory, all necessary facilities for the survey, execution and maintenance of such works.

Article 307.— Austria shall be obliged to make to the European Commission of the Danube all restitutions, reparations and indemnities for damages inflicted on the Commission during the war.

Article 308.— Should a deep-draught Rhine-Danube navigable waterway be constructed, Austria hereby undertakes to accept the application to the said navigable waterway of the same régime as that prescribed in Articles 292 and 294 to 299 of the present Treaty.

Chapter III.—Hydraulic System.

Article 309.— In default of any provisions to the contrary, when as the result of the fixing of a new frontier the hydraulic system (canalisation, inundations, irrigation, drainage, or similar matters) in a State is dependent on works executed within the territory of another State, or when use is made on the territory of a State, in virtue of pre-war usage, of water or hydraulic power, the source of which is on the territory of another State, an agreement shall be made between the States concerned to safeguard the interests and rights acquired by each of them.

Failing an agreement, the matter shall be regulated by an arbitrator appointed by the Council of the League of Nations.

Article 310.— Unless otherwise provided, when use is made for municipal or domestic purposes in one State of electricity or water, the source of which as the result of the fixing of a new frontier is on the territory of another State, an agreement shall be made between the States concerned to safeguard the interests and rights acquired by each of them.

Pending an agreement, central electric stations and waterworks shall be required to continue the supply up to an amount corresponding to the undertakings and contracts in force on November 3, 1918.

Failing an agreement, the matter shall be regulated by an Arbitrator appointed by the Council of the League of Nations.

SECTION III.— RAILWAYS.

Chapter I.—Freedom of Transit to the Adriatic for Austria.

Article 311.— Free access to the Adriatic Sea is accorded to Austria, who with this object will enjoy freedom of transit over the territories and in the ports severed from the former Austro-Hungarian Monarchy.

Freedom of transit is the freedom defined in Article 284 until such time as a General Convention on the subject shall have been concluded between the Allied and Associated Powers, whereupon the dispositions of the new Convention shall be substituted therefor.

Special Conventions between the States or Administrations concerned will lay down the conditions of the exercise of the right accorded above, and will settle in particular the method of using the ports and the free zones existing in them, the establishment of international (joint) services and tariffs including through tickets and waybills, and the maintenance of the Convention of Berne of Otcober 14, 1890, and its supplementary provisions until its replacement by a new Convention.

Freedom of transit will extend to postal, telegraphic, and telephonic services.

Chapter II.—Clauses Relating to International Transport.

Article 312.— Goods coming from the territories of the Allied and Associated Powers, and going to Austria, or in transit through Austria from or to the territories of the Allied and Associated Powers, shall enjoy on the Austrian railways as regards charges to be collected (rebates and drawbacks being taken into account), facilities, and all other matters, the most favourable treatment applied to goods of the same kind carried on any Austrian lines, either in internal traffic, or for export, import or in transit, under similar conditions of transport, for example as regards length of route. The same rule shall be applied, on the request of one or more of the Allied and Associated Powers, to goods specially designated by such Power or Powers coming from Austria and going to their territories.

International tariffs established in accordance with the rates referred to in the preceding paragraph and involving through way-bills shall be established when one of the Allied and Associated Powers shall require it from Austria.

However, without prejudice to the provisions of Articles 288 and 289, Austria undertakes to maintain on her own lines the régime of tariffs existing before the war as regards traffic to Adriatic and Black Sea

ports, from the point of view of competition with North German ports.

Article 313.— From the coming into force of the present Treaty the High Contracting Parties shall renew, in so far as concerns them and under the reserves indicated in the second paragraph of the present Article, the Conventions and Arrangements signed at Berne on October 14, 1890, September 20, 1893, July 16, 1895, June 16, 1898, and September 19, 1906, regarding the transportation of goods by rail.

If within five years from the date of the coming into force of the present Treaty a new Convention for the transportation of passengers, luggage and goods by rail shall have been concluded to replace the Berne Convention of October 14, 1890, and the subsequent additions referred to above, this new Convention and the supplementary provisions for international transport by rail which may be based on it shall bind Austria, even if she shall have refused to take part in the preparation of the Convention or to subscribe to it. Until a new Convention shall have been concluded, Austria shall conform to the provisions of the Berne Convention and the subsequent additions referred to above, and to the current supplementary provisions.

Article 314.— Austria shall be bound to co-operate in the establishment of through ticket services (for passengers and their luggage) which shall be required by any of the Allied and Associated Powers to ensure their communication by rail with each other and with all other countries by transit across the territories of Austria; in particular Austria shall, for this purpose, accept trains and carriages coming from the territories of the Allied and Associated Powers and shall forward them with a speed at least equal to that of her best long-distance trains on the same lines. The rates applicable to such through services shall not in any case be higher than the rates collected on Austrian internal services for the same distance, under the same conditions of speed and comfort.

The tariffs applicable under the same conditions of speed and comfort to the transportation of emigrants going to or coming from ports of the Allied and Associated Powers and using the Austrian railways, shall not be at a higher kilometric rate than the most favourable tariffs (drawbacks and rebates being taken into account) enjoyed on the said railways by emigrants going to or coming from any other ports.

Article 315.— Austria shall not apply specially to such through services, or to the transportation of emigrants going to or coming from the ports of the Allied and Associated Powers, any technical, fiscal or administrative measures, such as measures of customs examination, general police, sanitary police, and control, the result of which would be to impede or delay such services.

Article 316.— In case of transport partly by rail and partly by internal navigation, with or without through way-bill, the preceding Articles shall apply to the part of the journey performed by rail.

Chapter III.—Rolling-Stock.

Article 317.— Austria undertakes that Austrian wagons shall be fitted with apparatus allowing:

(1) of their inclusion in goods trains on the lines of such of the Allied and Associated Powers as are parties to the Berne Convention of May 15, 1886, as modified on May 18, 1907, without hampering the action of the continuous brake which may be adopted in such countries within ten years of the coming into force of the present Treaty, and

(2) of the inclusion of wagons of such countries in all goods trains on Austrian lines.

The rolling-stock of the Allied and Associated Powers shall enjoy on the Austrian lines the same treatment as Austrian rolling stock as regards movement, upkeep and repairs.

Chapter IV.—Transfers of Railway Lines.

Article 318.— Subject to any special provisions concerning the transfer of ports, waterways and railways situated in the territories transferred under the present Treaty, and to the financial conditions relating to the concessionnaires and the pensioning of the personnel, the transfer of railways will take place under the following conditions:

(1) The works and installations of all the railroads shall be handed over complete and in good condition.

(2) When a railway system possessing its own rolling stock is handed over in its entirety by Austria to one of the Allied and Associated Powers, such stock shall be handed over complete, in accordance with the last inventory before November 3, 1918, and in a normal state of upkeep.

(3) As regards lines without any special rolling stock, the distribution of the stock existing on the system to which these lines belong shall be made by Commissions of experts designated by the Allied and Associated Powers, on which Austria shall be represented. These Commissions shall have regard to the amount of the material registered on these lines in the last inventory before November 3, 1918, the length of track (sidings included), and the nature and amount of the traffic. These Commissions shall also specify the locomotives, carriages and wagons to be handed over in each case; they shall decide upon the conditions of their acceptance, and shall make the provisional arrangements necessary to insure their repair in Austrian workshops.

(4) Stocks of stores, fittings and plant shall be handed over under the same conditions as the rolling-stock.

The provisions of paragraphs 3 and 4 above shall be applied to the lines of former Russian Poland converted by the Austro-Hungarian authorities to the normal gauge, such lines being regarded as detached from the Austrian and Hungarian State systems.

Chapter V.—Provisions Relating to Certain Railway Lines.

Article 319.— When as a result of the fixing of new frontiers a railway connection between two parts of the same country crosses another country, or a branch line from one country has its terminus in another, the conditions of working, if not specifically provided for in the present Treaty, shall be laid down in a convention between the railway administrations concerned. If the administrations cannot come to an agreement as to the terms of such convention, the points of difference shall be decided by commissions of experts composed as provided in the preceding Article.

The establishment of all the new frontier stations between Austria and the contiguous Allied and Associated States, as well as the working of the lines between those stations, shall be settled by agreements similarly concluded.

Article 320.— With the object of insuring regular utilization of the railroads of the former Austro-Hungarian Monarchy owned by private companies which, as a result of the stipulations of the present Treaty, will be situated in the territory of several States, the administrative and technical reorganization of the said lines shall be regulated in each instance by an agreement between the owning Company and the States territorially concerned.

Any differences on which agreement is not reached, including questions relating to the interpretation of contracts concerning the expropriation of the lines, shall be submitted to arbitrators designated by the Council of the League of Nations.

This arbitration may, as regards the South Austrian Railway Company, be required either by the Board of Management or by the Committee representing the bond-holders.

Article 321.— Within a period of five years from the coming into force of the present Treaty, Italy may require the construction or improvement on Austrian territory of the new transalpine lines of the Col de Reschen and the Pas de Predil. Unless Austria decides to pay for the works herself, the cost of construction or improvement shall be paid by Italy. An arbitrator appointed by the Council of the League of Nations shall, after the lapse of such period as may be fixed by the Council, determine the portion of the cost of construction or improvement which must be repaid by Austria to Italy on account of the increase of revenue on the Austrian railway system resulting from these works.

Austria shall hand over to Italy gratuitously the surveys, with their annexes, for the construction of the following railway lines:

The line from Tarvis to Trieste by Raibl, Plezzo, Caporetto, Canale and Gorizia;

The local line from S. Lucia de Tolmino to Caporetto;

The line from Tarvis to Plezzo (new scheme);

The Reschen line connecting Landeck and Mals.

Article 322.— In view of the importance to the Czecho-Slovak State of free communications between that State and the Adriatic, Austria recognises the right of the Czecho-Slovak State to run its own trains over the sections included within her territory of the following lines:

(1) from Bratislava (Pressburg) towards Fiume *via* Sopron, Szembathely and Mura Keresztur, and a branch from Mura Keresztur to Pragerhof;

(2) from Budejovic (Budweiss) towards Trieste *via* Linz, S. Michael, Klagenfurt, and Assling, and the branch from Klagenfurt towards Tarvisio.

On the application of either party, the route to be followed by the Czecho-Slovak trains may be modified either permanently or temporarily by mutual agreement

between the Czecho-Slovak Railway Administration and those of the railways over which the running powers are exercised.

Article 323.— The trains for which the running powers are used shall not engage in local traffic, except by agreement between Austria and the Czecho-Slovak State.

Such running powers will include, in particular, the right to establish running sheds with small shops for minor repairs to locomotives and rolling-stock, and to appoint representatives where necessary to supervise the working of Czecho-Slovak trains.

Article 324.— The technical, administrative and financial conditions under which the rights of the Czecho-Slovak State shall be exercised shall be laid down in a Convention between the Railway Administration of the Czecho-Slovak State and the Railway Administrations of the Austrian systems concerned. If the Administrations cannot come to an agreement on the terms of this Convention, the points of difference shall be decided by an arbitrator nominated by Great Britain, and his decisions shall be binding on all parties.

In the event of disagreement as to the interpretation of the Convention or of difficulties arising unprovided for in the Convention, the same form of arbitration will be adopted until such time as the League of Nations may lay down some other procedure.

Chapter VI.—Transitory Provision.

Article 325.— Austria shall carry out the instructions given her, in regard to transport, by an authorised body acting on behalf of the Allied and Associated Powers:

(1) For the carriage of troops under the provisions of the present Treaty, and of material, ammunition and supplies for army use;

(2) As a temporary measure, for the transportation of supplies for certain regions, as well as for the restoration, as rapidly as possible, of the normal conditions of transport, and for the organisation of postal and telegraphic services.

Chapter VII.—Telegraphs and Telephones.

Article 326.— Notwithstanding any contrary stipulations in existing treaties, Austria undertakes to grant freedom of transit for telegraphic correspondence and telephonic communications coming from or going to any one of the Allied and Associated Powers, whether neighbours or not, over such lines as may be most suitable for international transit and in accordance with the tariffs in force. This correspondence and these communications shall be subjected to no unnecessary delay or restriction; they shall enjoy in Austria national treatment in regard to every kind of facility and especially in regard to rapidity of transmission. No payment, facility or restriction shall depend directly or indirectly on the nationality of the transmitter or the addressee.

Article 327.— In view of the geographical situation of the Czecho-Slovak State Austria agrees to the following modifications in the International Telegraph and Telephone Conventions referred to in Article 235 of Part X (Economic Clauses) of the present Treaty.

(1) On the demand of the Czecho-Slovak State Austria shall provide and maintain trunk telegraph lines across Austrian territory.

(2) The annual rent to be paid by the Czecho-Slovak State for each of such lines will be calculated in accordance with the provisions of the above-mentioned Conventions, but unless otherwise agreed shall not be less than the sum that would be payable under those Conventions for the number of messages laid down in those Conventions as conferring the right to demand a new trunk line, taking as a basis the reduced tariff provided for in Article 23, paragraph 5, of the International Telegraph Convention as revised at Lisbon.

(3) So long as the Czecho-Slovak State shall pay the above minimum annual rent of a trunk line;

(*a*) The line shall be reserved exclusively for transit traffic to and from the Czecho-Slovak State;

(*b*) The faculty given to Austria by Article 8 of the International Telegraph Convention of July 22, 1875, to suspend international telegraph services shall not apply to that line.

(4) Similar provisions will apply to the provision and maintenance of trunk telephone circuits, but the rent payable by the Czecho-Slovak State for a trunk telephone circuit shall, unless otherwise agreed, be double the rent payable for a trunk telegraph line.

(5) The particular lines to be provided together with any necessary administrative, technical, and financial conditions not provided for in existing International Conventions or in this Article shall be fixed by a further Convention between the States concerned. In default of agreement on such Convention they will be fixed by an arbitrator appointed by the Council of the League of Nations.

(6) The stipulations of the present Article may be varied at any time by agreement between Austria and the Czecho-Slovak State. After the expiration of ten years from the coming into force of this Treaty the conditions under which the Czecho-Slovak State shall enjoy the rights conferred by this Article may, in default of agreement by the parties, be modified at the request of either party by an arbitrator designated by the Council of the League of Nations.

(7) In case of any dispute between the parties as to the interpretation either of this Article or of the Convention referred to in paragraph 5, this dispute shall be submitted for decision to the Permanent Court of International Justice to be established by the League of Nations.

SECTION IV.— DISPUTES AND REVISION OF PERMANENT CLAUSES.

Article 328.— Disputes which may arise between interested Powers with regard to the interpretation and application of this Part of the present Treaty shall be settled as provided by the League of Nations.

Article 329.— At any time the League of Nations may recommend the revision of such of the above Articles as relate to a permanent administrative régime.

Article 330.— The stipulations in Articles 284 to 290, 293, 312, 314 to 316, and 326 shall be subject to revision by the Council of the League of Nations at any time after three years from the coming into force of the present Treaty.

Failing such revision, no Allied or Associated Power can claim after the expiration of the above period of three years the benefit of any of the stipulations in the Articles enumerated above on behalf of any portion of its territories in which reciprocity is not accorded in respect of such stipulations. The period of three years during which reciprocity cannot be demanded may be prolonged by the Council of the League of Nations.

The benefit of the stipulations mentioned above cannot be claimed by States to which territory of the former Austro-Hungarian Monarchy has been transferred, or which have arisen out of the dismemberment of that Monarchy, except upon the footing of giving in the territory passing under their sovereignty reciprocal treatment to Austria.

SECTION V.— SPECIAL PROVISION.

Article 331.— Without prejudice to the special obligations imposed on her by the present Treaty for the benefit of the Allied and Associated Powers, Austria undertakes to adhere to any General Conventions regarding the international régime of transit, waterways, ports or railways which may be concluded by the Allied and Associated Powers, with the approval of the League of Nations, within five years of the coming into force of the present Treaty.

PART XIII.— LABOR.

(Labor Clauses are similar to those of Part XIII of German Treaty.)

PART XIV.— MISCELLANEOUS PROVISIONS.

Article 373.— Austria undertakes to recognise and to accept the conventions made or to be made by the Allied and Associated Powers or any of them with any other Power as to the traffic in arms and in spirituous liquors, and also as to the other subjects dealt with in the General Acts of Berlin of February 26, 1885, and of Brussels of July 2, 1890, and the conventions completing or modifying the same.

Article 374.— The High Contracting Parties declare and place on record that they have taken note of the Treaty signed by the Government of the French Republic on July 17, 1918, with His Serene Highness the Prince of Monaco defining the relations between France and the Principality.

Article 375.— The High Contracting Parties, while they recognise the guarantees stipulated by the Treaties of 1815, and especially by the Act of November 20, 1815, in favour of Switzerland, the said guarantees constituting international obligations for the maintenance of peace, declare nevertheless that the provisions of these treaties, conventions, declarations and other supplementary Acts concerning the neutralised zone of Savoy, as laid down in paragraph 1 of Article 92 of the Final Act of the Congress of Vienna and in paragraph 2 of Article 3 of the Treaty of Paris of November 20, 1815, are no longer consistent with present conditions. For this reason the High Contracting Parties take note of the agreement reached between the French Government and the Swiss Government for the abrogation of the stipulations relating to this zone which are and remain abrogated.

The High Contracting Parties also agree that the stipulations of the Treaties of 1815 and of the other supplementary Acts concerning the free zones of Upper Savoy and the Gex district are no longer consistent with present conditions, and that it is for France and Switzerland to come to an agreement together with a view to settling between themselves the status of these territories under such conditions as shall be considered suitable by both countries.

ANNEX.

I. The Swiss Federal Council has informed the French Government on May 5, 1919, that after examining the provisions of Article 435 of the Peace conditions presented to Germany by the Allied and Associated Powers in a like spirit of sincere friendship it has happily reached the conclusion that it was possible to acquiesce in it under the following conditions and reservations:

(1) The neutralized zone of Haute-Savoie.

(*a*) It will be understood that as long as the Federal Chambers have not ratified the agreement come to between the two Governments concerning the abrogation of the stipulations in respect of the neutralized zone of Savoy, nothing will be definitively settled, on one side or the other, in regard to this subjet.

(*b*) The assent given by the Swiss Government to the abrogation of the above-mentioned stipulations presupposes, in conformity with the text adopted, the recognition of the guarantees formulated in favour of Switzerland by the Treaties of 1815 and particularly by the Declaration of November 20, 1815.

(*c*) The agreement between the Governments of France and Switzerland for the abrogation of the above-mentioned stipulations will only be considered as valid if the Treaty of Peace contains this Article in its present wording. In addition the Parties to the Treaty of Peace should endeavour to obtain the assent of the signatory Powers of the Treaties of 1815 and of the Declaration of November 20, 1815, which are not signatories of the present Treaty of Peace.

(2) Free zone of Haute-Savoie and the district of Gex:

(*a*) The Federal Council makes the most express reservations to the interpretation to be given to the statement mentioned in the last paragraph of the above Article for insertion in the Treaty of Peace, which provides that "the stipulations of the Treaties of 1815 and other supplementary acts concerning the free zones of Haute-Savoie and the Gex district are no longer consistent with present conditions." The Federal Council would not wish that its acceptance of the above wording should lead to the conclusion that it would agree to the suppression of a system intended to give neighbouring territory the benefit of a special régime which is appropriate to the geographical and economical situation and which has been well tested.

In the opinion of the Federal Council the question is not the modification of the customs system of the zones as set up by the Treaties mentioned above, but only the regulation in a manner more appropriate to the economic conditions of the present day of the terms of the exchange of goods between the regions in question. The Federal Council has been led to make the preceding observations by the perusal of the draft Convention concerning the future constitution of the zones which was annexed to the note of April 26 from the French Government. While making the above reservations the Federal Council declares its readiness to examine in the most friendly spirit any proposals which the French Government may deem it convenient to make on the subject.

(*b*) It is conceded that the stipulations of the Treaties of 1815 and other supplementary acts relative to the free zones will remain in force until a new arrangement is come to between France and Switzerland to regulate matters in this territory.

II. The French Government have addressed to the Swiss Government, on May 18, 1919, the following note in reply to the communication set out in the preceding paragraph:

In a note dated May 5 the Swiss Legation in Paris was good enough to inform the Government of the French Republic that the Federal Government adhered to the proposed Article to be inserted in the Treaty of Peace between the Allied and Associated Governments and Germany.

The French Government have taken note with much pleasure of the agreement thus reached, and, at their request, the proposed Article, which had been accepted by the Allied and Associated Governments, has been inserted under No. 435 in the Peace conditions presented to the German Plenipotentiaries.

The Swiss Government, in their note of May 5 on this subject, have expressed various views and reservations.

Concerning the observations relating to the free zones of Haute-Savoie and the Gex district, the French Government have the honour to observe that the provisions of the last paragraph of Article 435 are so clear that their purport cannot be misapprehended, especially where it implies that no other Power but France and Switzerland will in future be interested in that question.

The French Government, on their part, are anxious to protect the interests of the French territories concerned, and, with that object, having their special situation in view, they bear in mind the desirability of assuring them a suitable customs régime and determining, in a manner better suited to present conditions, the methods of exchanges between these territories and the adjacent Swiss territories, while taking into account the reciprocal interests of both regions.

It is understood that this must in no way prejudice the right of France to adjust her customs line in this region in conformity with her political frontier, as is done on the other portions of her territorial boundaries, and as was done by Switzerland long ago on her own boundaries in this region.

The French Government are pleased to note on this subject in what a friendly disposition the Swiss Government take this opportunity of declaring their willingness to consider any French proposal dealing with the system to be substituted for the present régime of the said free zones, which the French Government intend to formulate in the same friendly spirit.

Moreover, the French Government have no doubt that the provisional maintenance of the régime of 1815 as to the free zones referred to in the above mentioned paragraph of the note from the Swiss Legation of May 5, whose object is to provide for the passage from the present régime to the conventional régime, will cause no delay whatsoever in the establishment of the new situation which has been found necessary by the two Governments. This remark applies also to the ratification by the Federal Chambers, dealt with in paragraph 1 (*a*), of the Swiss note of May 5, under the heading "Neutralized zone of Haute-Savoie."

Article 376.— The Allied and Associated Powers agree that where Christian religious missions were being maintained by Austrian societies or persons in territory belonging to them, or of which the government is entrusted to them in accordance with the present Treaty, the property which these missions or missionary societies possessed, including that of trading societies whose profits were devoted to the support of missions, shall continue to be devoted to missionary purposes. In order to ensure the due execution of this undertaking the Allied and Associated Governments will hand over such property to boards of trustees appointed by or approved by the Governments and composed of persons holding the faith of the Mission whose property is involved.

The Allied and Associated Governments, while continuing to maintain full control as to the individuals by whom the Missions are conducted, will safeguard the interests of such Missions.

Austria, taking note of the above undertaking, agrees to accept all arrangements made or to be made by the Allied or Associated Governments concerned for carrying on the work of the said missions or trading societies and waives all claims on their behalf.

Article 377.— Without prejudice to the provisions of the present Treaty, Austria undertakes not to put forward directly or indirectly against any Allied or Associated Power, signatory of the present Treaty, any pecuniary claim based on events which occurred at any time before the coming into force of the present Treaty.

The present stipulation will bar completely and finally all claims of this nature, which will be thenceforward extinguished, whoever may be the parties in interest.

Article 378.— Austria accepts and recognises as valid and binding all decrees and orders concerning Austro-Hungarian ships and Austrian goods and all orders relating to the payment of costs made by any Prize Court of any of the Allied or Associated Powers, and undertakes not to put forward any claim arising out of such decrees or orders on behalf of any Austrian national.

The Allied and Associated Powers reserve the right to examine in such manner as they may determine all decisions and orders of Austro-Hungarian Prize Courts, whether affecting the property rights of nationals of those Powers or of neutral Powers. Austria agrees to furnish copies of all the documents constituting the record of the cases, including the decisions and orders made, and to accept and give effect to the recommendations made after such examination of the cases.

Article 379.— The High Contracting Parties agree that, in the absence of a subsequent agreement to the contrary, the Chairman of any Commission established by the present Treaty shall in the event of an equality of votes be entitled to a second vote.

Article 380.— Except where otherwise provided in the present Treaty, in all cases where the Treaty provides for the settlement of a question affecting particularly certain States by means of a special Convention to be concluded between the States concerned, it is understood by the High Contracting Parties that difficulties arising in this connection shall, until Austria is admitted to membership of the League of Nations, be settled by the Principal Allied and Associated Powers.

Article 381.— In the present Treaty the expression "former Austrian Empire" includes Bosnia and Herzegovina except where the text implies the contrary. This provision shall not prejudice the rights and obligations of Hungary in such territory.

The present Treaty, in French, in English, and in Italian, shall be ratified. In case of divergence the French text shall prevail, except in Parts I (Covenant of the League of Nations) and XIII (Labour), where the French and English texts shall be of equal force.

The deposit of ratifications shall be made at Paris as soon as possible.

Powers of which the seat of the Government is outside Europe will be entitled merely to inform the Government of the French Republic through their diplomatic representative at Paris that their ratification has been given; in that case they must transmit the instrument of ratification as soon as possible.

A first procès-verbal of the deposit of ratifications will be drawn up as soon as the Treaty has been ratified by Austria on the one hand, and by three of the Principal Allied and Associated Powers on the other hand.

From the date of this first procès-verbal the Treaty will come into force between the High Contracting Parties who have ratified it. For the determination of all periods of time provided for in the present Treaty this date will be the date of the coming into force the Treaty.

In all other respects the Treaty will enter into force for each Power at the date of the deposit of its ratification.

The French Government will transmit to all the signatory Powers a certified copy of the procès-verbaux of the deposit of ratifications.

In faith whereof the above-named Plenipotentiaries have signed the present Treaty.

Done at St. Germain-en-Laye, the 10th day of Sept. one thousand nine hundred and nineteen, in a single copy which will remain deposited in the archives of the French Republic, and of which authenticated copies will be transmitted to each of the Signatory Powers.

(3) Bulgarian Treaty, The. The Allied and Associated Powers handed the text of a treaty to the Bulgarian Peace Delegates at Paris, 19 Sept. 1919. This Treaty is arranged on the same plan as the Austrian Treaty. The following parts are identical with the Austrian Treaty:

Preamble.
Part I.— Covenant of the League of Nations.
Part VI.— Penalties.
Part X.— Aerial Navigation.
Part XII.— Labor Convention.

PART II.— THE FUTURE FRONTIERS OF BULGARIA.

On the North, the frontier with Roumania remains unchanged.

On the West, the frontier with the Serb-Croat-Slovene State for the most part follows the line of the old frontier with Serbia. Small portions of territory are ceded to the Serb-Croat-Slovene State, of which the most important is the town of Strumnitza and the surrounding district.

A modification is introduced into the southern frontier with territories to be subsequently attributed by the Principal Allied and Associated Powers and the new boundary follows a line which may be drawn roughly from a point about eight miles south-west of Bashmakli to Kilkik, passing close to Ardabashi and Daridere, which remain in Bulgarian territory and crossing the Kartal Dagh and the Tokatjik Dagh.

On the South-East line a slight modification taking in a small piece of Turkish territory north-west of Mustafa Pasha is introduced. The Black Sea forms as before the Eastern frontier.

PART III.— POLITICAL CLAUSES.

SECTION I.— SERB-CROAT-SLOVENE STATE.

Bulgaria recognizes the Serb-Croat-Slovene State and renounces in favour of that State all rights and title over the territories of the Bulgarian Monarchy situated outside the frontiers of Bulgaria, as defined by the present Treaty or by any Treaties concluded for the purpose of completing the present settlement. A Commission, consisting of seven members, five of whom shall be nominated by the principal Allied and Associated Powers, one by the Serb-Croat-Slovene State, and one by Bulgaria, shall be constituted within 15 days of the coming into force of the present Treaty to trace on the spot the frontier line. Bulgarian nationals who became resident in the territories assigned to the Serb-Croat-Slovene State after 1 Jan. 1910, will require a permit from the Serb-Croat-Slovene State to acquire Serb-Croat-Slovene nationality. All other Bulgarian nationals resident in those territories will acquire Serb-Croat-Slovene nationality *ipso facto* and lose their Bulgarian nationality.

SECTION II.— GREECE.

Bulgaria renounces in favour of Greece all rights and titles over the territories of the Bulgarian Monarchy situated outside the frontiers of Bulgaria as laid down in the sections dealing with frontiers and recognized by the present Treaty as forming part of Greece. Bulgarian nationals habitually resident in the territories assigned to Greece in accordance with the present Treaty will obtain Greek nationality *ipso facto* and will lose their Bulgarian nationality. They will, however, be entitled within a period of two years from the coming into force of the present Treaty, if over 18 years of age, to opt for Bulgarian nationality, a similar privilege being accorded to Greeks over 18 years of age who are Bulgarian nationals habitually resident in Bulgaria who may wish to opt for Greek nationality. The proportion and nature of the financial obligations of Bulgaria which Greece will assume on account of the territory placed under her sovereignty will be determined in accordance with the financial clauses of the present Treaty.

SECTION III.— THRACE.

Bulgaria renounces in favour of the Principal Allied and Associated Powers all rights and title over the territories in Thrace which used to belong to the Bulgarian Monarchy and which being situated outside the new frontiers of Bulgaria have not at present been assigned to any State. Bulgaria undertakes to accept whatever settlement may be made by the Principal Allied and Associated Powers in regard to these territories and the Principal Allied and Associated Powers undertake, on the other hand, to ensure economic outlets for Bulgaria to the Aegean Sea under the conditions which will be fixed at a later date.

SECTION IV.—PROTECTION OF MINORITIES.

The provisions for the protection of minorities reproduce exactly those laid down in the Austrian Treaty, adding the proviso that all persons not nationals of any other State habitually resident in Bulgaria at the date of the coming into force of the present Treaty, as well as all persons born in Bulgaria who are not born nationals of another State, *ipso facto* become Bulgarian nationals.

SECTION V.— GENERAL PROVISIONS.

Bulgaria undertakes to recognize all Treaties or agreements which may be entered into by the Allied and Associated Powers with States now existing or coming into existence in future in the whole or part of the former Empire of Russia as it existed on 1 Aug. 1914, and to recognize the frontiers of any such States as determined therein.

Bulgaria accepts definitely the abrogation of the Brest-Litovsk Treaties and of all Treaties, Conventions, and Agreements entered into by her with the Maximalist Government in Russia.

The Allied and Associated Powers formally reserve the rights of Russia to obtain from Bulgaria restitution and reparation based on the principles of the present Treaty. Bulgaria undertakes to recognize the Treaties of Peace and additional Conventions which have been or may be concluded by the Allied and Associated Powers with the Powers who fought on the side of Bulgaria.

Bulgaria declares that she recognizes the Protectorate proclaimed over Egypt by Great Britain on 18 Dec. 1914, and that she will make no claim on behalf of herself

or her nationals to the benefits or immunities derived from the régime of the capitulations in Egypt regarding all Treaties, agreements, and contracts concluded by Bulgaria with Egypt as abrogated as from 11 Oct. 1915.

Bulgaria declares that she recognizes the French protectorate in Morocco, and that she will make no claim on behalf of herself or her nationals to the benefits or immunities derived from the régime of the capitulations in Morocco regarding all Treaties, agreements, arrangements, and contracts concluded by Bulgaria with Morocco as abrogated as from 11 Oct. 1915.

PART IV.— MILITARY, NAVAL, AND AIR CLAUSES.

SECTION I.— MILITARY CLAUSES.

The military terms fix the total number of effectives of the Bulgarian Army, the sole function of which shall be to maintain internal order and control frontiers, at 20,000, including officers, and it is provided that there will be no other military forces raised outside this figure. This army shall be recruited both as regards officers and men on a voluntary basis; in the case of officers (who shall not be retired before the age of 40), for not less than 20 years' service, and in the case of non-commissioned officers and men, for not less than 12 years' service. The number of customs, forestry, or police officials shall be fixed by a military Inter-Allied Commission of Control, and in no case shall the number of these officials who are armed with rifles exceed 10,000, so that the total number of rifles in use in Bulgaria shall not exceed 30,000.

The proportion of officers, including *personnel*, staffs, and special services, shall not exceed one-twentieth of the total effectives with the colours, and that of non-commissioned officers shall not exceed one-fifteenth of the total effectives with the colours. The effectives of units shall be compulsorily fixed between the maximum and minimum figures laid down in the Treaty.

On the expiration of three months of the coming into force of the present Treaty, there must only exist in Bulgaria one military school for the sole purpose of the recruitment of officers for the authorized units. The number of students admitted to instruction in the school shall be strictly in proportion to the vacancies to be filled in the officer cadres, and both cadres and students shall be reckoned as part of the effectives of the Bulgarian Army.

Within three months of the coming into force of the present Treaty, the Bulgarian Government shall deposit in places notified by the Allied and Associated Powers any surplus of armament and munitions exceeding the figures fixed per thousand men in the present Treaty, and no other stock, depot, or reserve of munitions shall be formed. The number and calibre of guns constituting the fixed normal armament of fortified places existing at present in Bulgaria shall constitute the maximum amount which may not be exceeded. Within three months of the coming into force of the present Treaty, the maximum stock of ammunition for these guns will be reduced to and maintained at the rates of 1,500 rounds per gun of the calibre of 105 mm. and under, and 500 rounds per gun of higher calibre.

No new fortifications shall be constructed in Bulgaria. No poisonous gas or liquid fire shall be manufactured or imported, nor any tanks nor armoured cars, and within three months of the coming into force of the present Treaty, all arms, munitions, and war material of whatever origin or kind existing in Bulgaria in excess of the authorized quantity shall be handed over to the principal Allied and Associated Powers at such point in Bulgarian territory as they may appoint. The Allied and Associated Powers shall also decide on the disposal of such material.

The manufacture of arms, munitions, and of war material shall only be carried on in one single factory, controlled by and belonging to the State, whose output shall be strictly limited to such manufacture as is sanctioned above.

SECTION II.— NAVAL CLAUSES.

The naval terms provide that from the date of the coming into force of the Treaty, all Bulgarian warships, including submarines existing or under construction, are finally to be surrendered to the principal Allied and Associated Powers or broken up. Submarines may not be constructed or acquired even for commercial purposes. All naval arms, munitions, and other war material belonging to Bulgaria at the date of the Armistice must be surrendered to the Allies. The Bulgarian wireless station at Sofia will be under Allied supervision and may only be used for commercial messages during the three months after the coming into force of the present Treaty. Nor during the same period may Bulgaria build any more high-power wireless stations.

SECTION III.—AIR CLAUSES.

The air clauses provide that the armed forces of Bulgaria must not include any military or naval air forces. The entire *personnel* of the air forces in Bulgaria is to be demobilized within two months.

The aircraft of the Allied and Associated Powers is to enjoy full liberty of passage and landing over and in Bulgarian territory until the complete evacuation of that territory by the Allied and Associated troops. The manufacture of aircraft and parts of aircraft is forbidden for six months. All military and naval aircraft, including dirigible and aeronautical material, are to be delivered on the ratification of the present Treaty.

SECTION IV.— INTER-ALLIED COMMISSIONS OF CONTROL.

All Military, Naval, and Air Clauses contained in the present Treaty for the execution of which a time limit is prescribed shall be executed by Bulgaria under the control of Inter-Allied Commissions appointed for this purpose by the Principal Allied and Associated Powers.

The Inter-Allied Commissions of Control may establish their organizations at Sofia and shall be entitled to proceed as often as they think fit to any point in Bulgarian territory or to send sub-commissions to any such point. The Bulgarian Government must furnish to the Inter-Allied Commissions of Control all such information and documents as the latter may think necessary to ensure the execution of their mission, and all means (both in *personnel* and material) which said Commissions may need to ensure complete execution of the Military, Naval, or Air Clauses. The Bulgarian Government must also attach a qualified representative to each Inter-Allied Commission of Control with the duty of receiving the communications which the Commission may have to address to the Bulgarian Government and of furnishing it with or procuring all information or documents demanded.

The upkeep and cost of the Inter-Allied Commissions of Control and the expense involved by their work shall be borne by Bulgaria.

PART V.— REPARATION AND FINANCIAL CLAUSES.

This section follows the similar one in the Austrian Treaty, except for one article, which in the case of Bulgaria, provides for an Inter-Allied Commission of Inquiry into offences against the laws of war committed by the Bulgarian authorities and to search for non-repatriated Allied and Associated nationals.

PARTS VII AND VIII.— REPARATION AND FINANCIAL CLAUSES.

REPARATION.

The Allied and Associated Governments, while recognizing that the resources of Bulgaria are insufficient to enable adequate reparation to be made, agree to accept from Bulgaria such reparation as she can make, and fix the sum of 2,250,000,000 (two-and-a-quarter milliards) of francs, in gold, which amount (except as hereinafter provided) shall be discharged by a series of half-yearly payments on 1 January and 1 July in each year, beginning on 1 July 1920. The payments on 1 July 1920, and 1 Jan. 1921, shall represent interest at the rate of 2 percent per annum on the total sum from 1 Jan. 1920. Thereafter each half-yearly payment shall include payment of interest at 5 percent per annum on the amount of the capital sum outstanding and the provision of a sinking fund sufficient to extinguish the total amount on 1 Jan. 1958.

The sums shall be remitted through the Inter-Allied Commission referred to in this Treaty to the Reparation Commission created by the Treaty of Peace with Germany on 28 June 1919 (hereinafter referred to as the Reparation Commission), in accordance with the arrangements already made. The Reparation Commission shall have power at any time to dispose, either by sale or otherwise, of gold bonds based on the payments to be made by Bulgaria, the nominal amount of which bonds shall be fixed by it in consultation with the Inter-Allied Commission, but shall in no case exceed the total capital sums then outstanding. In such case Bulgaria undertakes to deliver to the Reparation Commission through the Inter-Allied Commission the necessary bonds in such form, number, and denominations and terms as the Reparation Commission may determine. Bonds so delivered shall be direct obligations of the Bulgarian Government, but all arrangements for the service of the bonds shall be made by the Inter-Allied Commission. The Inter-Allied Commission shall pay all interest, sinking fund.

and other charges connected with the bonds out of the half-yearly payments to be made by Bulgaria in accordance with this Treaty. Any surplus shall continue to be paid to the order of the Reparation Commission.

The Inter-Allied Commission shall have discretion to recommend to the Reparation Commission either the reduction of any particular payment due or a reduction of the total capital sum to be paid by Bulgaria, and the Reparation Commission shall have power by a majority of votes to make any such reduction or postponement up to the extent recommended by the Inter-Allied Commission. Bulgaria, on the other hand, shall have power at any time to make immediate payments in reduction of the total capital sum due over and above the half-yearly payments.

While Bulgaria recognizes the transfer to the Allied and Associated Powers of any financial claims which her late allies may have against her, particularly those derived from the execution of undertakings entered into during the war, the Allied and Associated Powers agree not to require any payment in respect of those claims which have been taken into account in fixing the amount of the financial reparation to be paid by Bulgaria.

Bulgaria undertakes to return to Greece, Roumania, and the Serb-Croat-Slovene State respectively all records, archives, and articles of archaeological, historic, or artistic interest which have been taken away from the territories of these countries during the present war, and live stock of the descriptions and in the numbers set out in the Treaty, in restitution for the animals taken away by her during the war from the territories of the countries named. Bulgaria undertakes by way of special compensation for the destruction caused to the coal mines situated on Serbian territory by the Bulgarian armies to deliver to the Serb-Croat-Slovene State during five years from the coming into force of the present Treaty 50,000 (fifty thousand) tons of coal a year from the output of the State mines at Pernik, provided these deliveries are sanctioned by the Inter-Allied Commission, which will require to be satisfied that such deliveries of coal will not unduly interfere with the economic life of Bulgaria.

The Inter-Allied Commission above referred to shall be established at Sofia as soon as possible after the coming into force of the present Treaty. It shall consist of three members, to be nominated respectively by the Governments of the British Empire, France, and Italy. Bulgaria shall be represented at the Commission by a Commissioner who shall take part in the sittings whenever invited by the Commission to do so, but shall not have the right to vote.

In the law relating to the Commission there shall be laid down a list of the taxes and revenues (now existing or hereafter to be created) estimated to be sufficient to produce the sums above referred to. This list shall include all revenues or receipts arising from concessions made or to be made for the working of mines or quarries, or for the carrying on of any works of public utility, or of any monopolies for the manufacture or sale of any articles in Bulgaria. This list may be altered from time to time with the unanimous consent of the Commission.

In case of default by Bulgaria in the performance of her obligations the Commission shall be entitled to the extent, and for the period it may determine, to assume the full control of and undertake the collection of such taxes and sources of revenue, and to hold and disburse the proceeds thereof, and to apply any net proceeds after meeting the cost of administration and collection to the satisfaction of reparation obligations of Bulgaria, subject to any priorities laid down in this Treaty.

FINANCIAL.

Bulgaria is required to make the following payments in the following order of priority —

1. Cost of military occupation.
2. The service of such part of the external Ottoman Public Debt as a Commission appointed for the purpose may attribute to Bulgaria.
3. The cost of reparation as prescribed by the present Treaty.

PART IX.— ECONOMIC CLAUSES.

The Economic Clauses are virtually identical with those in the Austrian Treaty.

In the section on property, rights, and interests, a modification has been introduced. The Bulgarian Government is required to revoke all the exceptional war measures affecting the property of Allied nationals, whereas similar measures put into operation by the Allied and Associated Powers are declared final and binding. Bulgaria, in a series of new provisions, is made responsible for certain obligations incurred by her owing to her acquisition of certain property after the Balkan Wars.

PART XI.— PORTS, WATERWAYS AND RAILWAYS.

The section dealing with Ports, Waterways, and Railways follows almost exactly the lines of the Austrian Treaty.

PART XIII.— MISCELLANEOUS PROVISIONS.

This section follows the similar one in the Austrian Treaty, except for a few minor points.

(4) The Polish Treaty. The treaty with Poland was the first of the formal agreements through which the Entente and Associated Powers bound the new states of eastern Europe to maintain institutions of modern political freedom under the general supervision of the League of Nations. By this treaty Poland was bound to protect minorities against discrimination, and to assume payment of part of the Russian debt.

M. Clemenceau, President of the Peace Conference, transmitted the treaty to the Polish government on 24 June 1919 accompanied by a long letter to Paderewski, the Polish premier, in which were set forth the reasons for the various conditions, unusual to such a document, expressed in the treaty. The salient features of this letter are given below, followed by the text of the treaty as signed by the Allied and Associated Powers on 28 June 1919:

On behalf of the Supreme Council of the principal allied and associated powers, I have the honor of communicating to you herewith, in its final form, the text of the treaty which, in accordance with Article 93 of the treaty of peace with Germany, Poland will be asked to sign on the occasion of the confirmation of her recognition as an independent State and of the transference to her of the territories included in the former German Empire which are assigned to her by the said treaty.

The principal provisions were communicated to the Polish delegation in Paris in May last and were subsequently communicated direct to the Polish Government through the French Minister at Warsaw. The council since has had the advantage of the suggestions which you were good enough to convey in the memorandum of June 16, and as the result of a study of the suggestion modifications have been introduced in the text of the treaty. The council believes that it will be found that, by the modification, the principal points to which attention was drawn in your memorandum have, in so far as they relate to specific provisions of the treaty, been adequately covered.

In formally communicating to you the final decision of the principal allied and associated powers in this matter I should desire to take this opportunity of explaining in a more formal manner than has hitherto been employed the conditions by which the principal allied and associated powers have been guided in dealing with the question.

GUIDING PRINCIPLES.

One.— In the first place, I would point out that the treaty does not constitute any fresh departure. It has for long been the established procedure of the public law of Europe that when a State is created, or even when large accessions of territory are made to an established State, the joint and formal recognition by the great powers should be accompanied by the requirement that such State should, in the form of a binding international convention, undertake to comply with certain principles of government. This principle, for which there are numerous other precedents, received the explicit sanction when, at the last great assembly of European powers — the Congress of Berlin — the sovereignty and independence of Serbia, Montenegro, and Rumania were recognized. It is desirable to recall the words used on this occasion by the British, French, Italian and German plenipotentiaries, as recorded in the protocol of June 28, 1878.

Two.— The principal allied and associated powers are of the opinion that they would be false to the responsibility which rests upon them if on this occasion they departed from what has become an established tradition. In this connection I must also recall to your

consideration the fact that it is through the endeavors and sacrifices of the powers in whose name I am addressing you that the Polish Nation owes the recovery of its independence. It is by their decision that sovereignty is being re-established over the territories in question, and that the inhabitants of these territories are being incorporated in the Polish Nation. It is on the support which these powers will afford to the League of Nations that the future Poland will, to a large extent, depend for the secure possession of these territories.

There rests, therefore, upon these powers an obligation which they cannot evade to secure in the most permanent and solemn form guarantees for certain essential rights which will afford to the inhabitants the necessary protection, whatever changes may take place in the internal constitution of the Polish State.

It is in accordance with this obligation that Clause 93 was inserted in the treaty of peace with Germany. This clause relates only to Poland, but a similar clause applies the same principles to Czechoslovakia, and other clauses have been inserted in the treaty of peace with Austria, and will be inserted in those with Hungary and Bulgaria, under which similar obligations will be undertaken by other States which, under those treaties, receive large accessions of territory.

The consideration of these facts would be sufficient to show that by the requirement addressed to Poland at the time when it is receiving in the most solemn manner the joint recognition of the re-establishment of its sovereignty and independence, and when large accessions of territory are being assigned to it, no doubt is thrown upon the sincerity of the desire of the Polish Government and the Polish Nation to maintain the general principles of justice and liberty. Any such doubt would be far from the intention of the principal allied and associated powers.

Three.— It is indeed true that the new treaty differs in form from earlier conventions dealing with similar matters. The change of form is a necessary consequence and an essential part of the new system of international relations which is now being built up by the establishment of the League of Nations. Under the older system the guarantee for the execution of similar provisions was vested in the great powers. Experience has shown that this was in practice ineffective, and it was also open to the criticism that it might give to the great powers, either individually or in combination, a right to interfere in the internal constitution of the States affected, which could be used for political purposes.

Under the new system the guarantee is intrusted to the League of Nations. The clauses dealing with this guarantee have been carefully drafted, so as to make it clear that Poland will not be in any way under the tutelage of those powers who are signatory to the treaty.

I should desire, moreover, to point out to you that provision has been inserted in the treaty by which disputes arising out of its provisions may be brought before the court of the League of Nations. In this way differences which might arise will be removed from the political sphere and placed in the hands of a judicial court, and it is hoped that thereby an impartial decision will be facilitated, while at the same time any danger of political interferences by the powers in the internal affairs of Poland will be avoided.

Four.— The particular provisions to which Poland and the other States will be asked to adhere differ to some extent from those which were imposed on the new States at the Congress of Berlin. But the obligations imposed upon new States seeking recognition have at all times varied with the particular circumstances. . . .

The situation with which the powers have now to deal is new, and experience has shown that new provisions are necessary. The territories now being transferred both to Poland and to other States inevitably include a large population speaking languages and belonging to races different from that of the people with whom they will be incorporated. Unfortunately, the races have been estranged by long years of bitter hostilities. It is believed that these populations will be more easily reconciled to their new position if they know that from the very beginning they have assured protection and adequate guarantees against any danger of unjust treatment or oppression. The very knowledge that these guarantees exist will, it is hoped, materially help the reconciliation which all desire, and will, indeed, do much to prevent the necessity of its enforcement.

Five.— To turn to the individual clauses of the present treaty. Article 2 guarantees to all inhabitants those elementary rights which are, as a matter of fact, secured in every civilized State. Clauses 3 to 6 are designed to insure that all the genuine residents in the territories now transferred to Polish sovereignty shall in fact be assured of the full privileges of citizenship. Articles 7 and 8, which are in accordance with precedent, provide against any discrimination against those Polish citizens who by their religion, their language, or by their race differ from the large mass of the Polish population. It is understood that, far from raising any objection to the manner of the articles, the Polish Government have already, of their own accord, declared their firm intention of basing their institutions on the cardinal principles enunciated therein. . . .

Six.— Clauses 10 and 12 deal specifically with the Jewish citizens of Poland. The information at the disposal of the principal allied and associated powers as to the existing relations between the Jews and the other Polish citizens has led them to the conclusion that, in view of the historical development of the Jewish question and the great animosity aroused by it, special protection is necessary for the Jews of Poland. These clauses have been limited to the minimum which seems necessary under the circumstances of the present day, viz., the maintenance of Jewish schools and the protection of the Jews in the religious observance of their Sabbath.

It is believed that these stipulations will not create any obstacle to the political unity of Poland. They do not constitute any recognition of the Jews as a separate political community within the Polish State. The educational provisions contain nothing beyond what is in fact provided in the educational institutions of many highly organized modern States. There is nothing inconsistent with the sovereignty of the State in recognizing and supporting schools in which children shall be brought up in the religious influences to which they are accustomed in their home. Ample safeguards against any use of non-Polish language to encourage a spirit of national separation have been provided in the express acknowledgment that the provisions of this treaty do not prevent the Polish State from making the Polish language obligatory in all its schools and educational institutions. . . .

In conclusion, I desire to express to you on behalf of the allied and associated powers the very sincere satisfaction which they feel at the re-establishment of Poland as an important State. They cordially welcome the Polish Nation on its re-entry into the family of nations. They recall the great services which the ancient Kingdom of Poland rendered to Europe both in public affairs and by its contributions to the progress of mankind, which is the common work of all civilized nations. They believe that the voice of Poland will add to the wisdom of their common deliberations in the cause of peace and harmony, that its influence will be used to further the spirit of liberty and justice, both in internal and external affairs, and that thereby it will help in the work of reconciliation between the nations which, with the conclusion of peace, will be the common task of humanity.

TEXT OF THE POLISH TREATY.

THE UNITED STATES OF AMERICA, THE BRITISH EMPIRE, FRANCE, ITALY, AND JAPAN, THE PRINCIPAL ALLIED AND ASSOCIATED POWERS, ON THE ONE HAND; AND POLAND, ON THE OTHER HAND:

WHEREAS, The allied and associated powers have, by the success of their arms, restored to the Polish Nation the independence of which it had been unjustly deprived; and

WHEREAS, By the proclamation of March 30, 1917, the Government of Russia assented to the re-establishment of an independent Polish State; and

WHEREAS, The Polish State, which now, in fact, exercises sovereignty over those portions of the former Russian Empire which are inhabited by a majority of Poles has already been recognized as a sovereign and important State by the principal allied and associated powers; and

WHEREAS, Under the treaty of peace concluded with Germany by the allied and associated powers, a treaty of which Poland is a signatory, certain portions of the former German Empire will be incorporated in the territory of Poland; and

WHEREAS, Under the terms of the said treaty of peace, the boundaries of Poland not already laid down are to be subsequently determined by the principal allied and associated powers;

The United States of America, the British Empire, France, Italy, and Japan, on the one hand, confirming their recognition of the Polish State, constituted within the said limits as a sovereign and independent member of the family of nations and being anxious to insure the execution of the provisions of Article 93 of the said treaty of peace with Germany:

Poland, on the other hand, desiring to conform her institutions to the principles of liberty and justice, and

to give a sure guarantee to the inhabitants of the territory over which she assumed sovereignty; for this purpose the following representatives of the high contracting parties:

The President of the United States of America; his Majesty the King of the United Kingdom of Great Britain and Ireland and of the British dominions beyond the seas, Emperor of India; the President of the French Republic; his Majesty the King of Italy; his Majesty the Emperor of Japan, and the President of the Polish Republic, after having exchanged their full powers, found in good and due form, have agreed as follows:

CHAPTER I.

Article 1.— Poland undertakes that the stipulations contained in Articles 2 and 8 of this chapter shall be recognized as fundamental law, and that no law, regulation, or official action shall conflict or interfere with these stipulations, nor shall any law, regulation, or official action prevail over them.

Article 2.— Poland undertakes to assure full and complete protection to life and liberty to all inhabitants of Poland, without distinction of birth, nationality, language, race, or religion.

All inhabitants of Poland shall be entitled to the free exercise, whether public or private, of any creed, religion, or belief whose practices are not inconsistent with public order or public morals.

Article 3.— Poland admits and declares to be Polish nationals ipso facto Hungarian or Russian nationals habitually resident, at the date of the coming into force of the present treaty, in territory which is or may be recognized as forming part of Poland under the treaties with Germany, Austria, Hungary, or Russia, respectively, but subject to any provisions in the said treaties relating to persons who became resident in such territory after a specified date.

Nevertheless, the persons referred to above who are over 12 years of age will be entitled under the conditions contained in the said treaties to opt for any other nationality which may be open to them. Option by a husband will cover his wife and option by parents will cover their children under 18 years of age.

Persons who have exercised the above right to option must, except where it is otherwise provided in the treaty of peace with Germany, transfer within the succeeding twelve months their place of residence to the State for which they have opted. They will be entitled to retain their immovable property in Polish territory. They may carry with them their movable property of every description. No export duties may be imposed upon them in connection with the removal of such property.

Article 4.— Poland admits and declares to be Polish nationals, ipso facto and without the requirement of any formality, persons of German, Austrian, Hungarian, or Russian nationality who were born in the said territory of parents habitually resident there, even if at the date of the coming into force of the present treaty they are not themselves habitually resident there.

Nevertheless, within two years after the coming into force of the present treaty, these persons may make a declaration before the competent Polish authorities in the country in which they are resident, stating that they abandon Polish nationality, and they will then cease to be considered as Polish nationals. In this connection a declaration by a husband will cover his wife, and a declaration by parents will cover their children under 18 years of age.

Article 5.— Poland undertakes to put no hindrance in the way of the exercise of the right which the persons concerned have, under the treaties concluded or to be concluded by the allied and associated powers with Germany, Austria, Hungary, or Russia, to choose whether or not they will acquire Polish nationality.

Article 6.— All persons born in Polish territory who are born nationals of another State shall ipso facto become Polish nationals.

Article 7.— All Polish nationals shall be equal before the law and shall enjoy the same civil and political rights without distinction as to race, language, or religion.

Differences of religion, creed, or confession shall not prejudice any Polish national in matters relating to the enjoyment of civil or political rights, as for admission to public employments, functions, and honors, or the exercise of professions and industries.

No restriction shall be imposed on the free use by any Polish national of any language in private intercourse, in commerce, in religion, in the press, or in publications of any kind, or at public meetings.

Notwithstanding any establishment by the Polish Government of an official language, adequate facilities shall be given to Polish nationals of non-Polish speech for the use of their language, either orally or in writing, before the courts.

Article 8.— Polish nationals who belong to racial, religious, or linguistic minorities shall enjoy the same treatment and security in law and in fact as the Polish nationals. In particular they shall have an equal right to establish, manage, and control at their own expense charitable, religious, and social institutions, schools and other educational establishments, with the right to use their own language and to exercise their religion freely therein.

Article 9.— Poland will provide, in the public educational system in towns and districts in which a considerable proportion of Polish nationals of other than Polish speech are residents, adequate facilities for insuring that in the primary schools instruction shall be given to the children of such Polish nationals through the medium of their own language. This provision shall not prevent the Polish Government from making the teaching of the Polish language obligatory in the said schools.

In towns and districts where there is a considerable proportion of Polish nationals belonging to racial, religious, or linguistic minorities, these minorities shall be assured an equitable share in the enjoyment and application of the sums which may be provided out of public funds under the State, municipal, or other budgets, for educational, religious, or charitable purposes.

The provisions of this article shall apply to Polish citizens of German speech only in that part of Poland which was German territory on Aug. 1, 1914.

Article 10.— Educational committees appointed locally by the Jewish communities of Poland will, subject to the general control of the State, provide for the distribution of the proportional share of public funds allocated to Jewish schools in accordance with Article 9, and for the organization and management of these schools.

The provision of Article 9 concerning the use of language in schools shall apply to these schools.

Article 11.— Jews shall not be compelled to perform any act which constitutes a violation of their Sabbath, nor shall they be placed under any disability by reason of their refusal to attend courts of law or to perform any legal business on their Sabbath. This provision, however, shall not exempt Jews from such obligations as shall be imposed upon all other Polish citizens for the necessary purposes of military service, national defense, or the preservation of public order.

Poland declares her intention to refrain from ordering or permitting elections, whether general or local, to be held on a Saturday, nor will registration for electoral or other purposes be compelled to be performed on a Saturday.

Article 12.— Poland agrees that the stipulations in the foregoing articles, so far as they affect persons belonging to racial, religious, or linguistic minorities, constitute obligations of international concern, and shall be placed under the guarantee of the League of Nations. They shall not be modified without the assent of a majority of the Council of the League of Nations. The United States, the British Empire, France, Italy, and Japan hereby agree not to withhold their assent from any modification in these articles which is in due form assented to by a majority of the Council of the League of Nations.

Poland agrees that any member of the Council of the League of Nations shall have the right to bring to the attention of the Council any infraction, or any danger of infraction, of any of these obligations, and that the Council may thereupon take such action and give such direction as it may deem proper and effective in the circumstances.

Poland further agrees that any difference of opinion as to question of law or fact arising out of these articles, between the Polish Government and any of the principal allied and associated powers, or any other power a member of the Council of the League of Nations, shall be held to be a dispute of an international character under Article 14 of the Covenant of the League of Nations. The Polish Government hereby consents that any such dispute shall, if the other party thereof demands, be referred to the Permanent Court of International Justice. The decision of the Permanent Court shall be final and shall have the same force and effect as an award under Article 13 of the covenant.

CHAPTER II.

Article 13.— Each of the principal allied and associated powers, on the one part, and Poland on the other shall be at liberty to appoint diplomatic representatives to reside in their respective capitals, as well as Consul Generals, Consuls, Vice-Consuls, and Consular Agents, to reside in the towns and ports of their respective territories.

Consul Generals, Consuls, Vice Consuls, and Consular Agents, however, shall not enter upon their duties until they have been admitted in the usual manner by the Government in the territory of which they are stationed.

Consul Generals, Consuls, Vice Consuls, and Consular Agents shall enjoy all the facilities, privileges, exemptions, and immunities of every kind which are or shall be granted to Consular officers of the most favored nation.

Article 14.— Pending the establishment of a permanent tariff by the Polish Government, goods originating in the allied and associated States shall not be subject to any higher duties on importation into Poland than the most favorable rates of duty applicable to goods of the same kind under either the German, Austro-Hungarian, or Russian customs tariffs on July 1, 1914.

Article 15.— Poland undertakes to make no treaty, convention, or arrangement, and to take no other action, which will prevent her from joining in any general agreement for the equitable treatment of the commerce of other States that may be concluded under the auspices of the League of Nations within five years from the coming into force of the present treaty.

Poland also undertakes to extend to all the allied and associated States any favors or privileges in customs matters which they may grant during the same period of five years to any State with which, since August, 1914, the Allies have been at war, or to any State which may have concluded with Austria special customs arrangements as provided for in the treaty of peace to be concluded with Austria.

Article 16.—Pending the conclusion of the general agreement referred to above, Poland undertakes to treat on the same footing as national vessels, or vessels of the most favored nation, the vessels of all the allied and associated States which accord similar treatment to Polish vessels.

By way of exception from this provision, the right of Poland or any other allied or associated State to confine her maritime coasting trade to national vessels is expressly reserved.

Article 17.— Pending the conclusion, under the auspices of the League of Nations, of a general convention to secure and maintain freedom of communications and of transit, Poland undertakes to accord freedom of transit of persons, goods, vessels, carriages, wagons, and mails in transit to or from any allied or associated State over Polish territory, including territorial waters, and to treat them at least as favorably as the persons, goods, vessels, carriages, wagons, and mails respectively of Polish or of any other more favored nationality, origin, importation, or ownership, as regards facilities, charges, restrictions, and all other matters.

All charges imposed in Poland on such traffic in transit shall be reasonable having regard to the conditions of the traffic. Goods in transit shall be exempt from all customs or other duties. Tariffs for transit traffic across Poland and tariffs between Poland and any allied or associated power, involving through tickets or waybills, shall be established at the request of that allied or associated power.

Freedom of transit will extend to postal, telegraphic, and telephonic services.

It is agreed that no allied or associated power can claim the benefit of these provisions on behalf of any part of its territory in which reciprocal treatment is not accorded with respect to the same subject matter.

If within a period of five years from the coming into force of the present treaty no general convention as aforesaid shall have been concluded under the auspices of the League of Nations, Poland shall be at liberty at any time thereafter to give twelve months' notice to the Secretary General of the League of Nations to terminate obligations of this article.

Article 18.— Pending the conclusion of a general convention on the international régime of waterways, Poland undertakes to apply to the river system of the Vistula (including the Bug and the Narest) the régime applicable to international waterways set out in Articles 332 to 337 of the treaty of peace with Germany.

Article 19.— Poland undertakes to adhere, within twelve months of the coming into force of the present treaty, to the international conventions specified in Annex I.

Poland undertakes to adhere to any new convention, concluded with the approval of the Council of the League of Nations within five years of the coming into force of the present treaty, to replace any of the international instruments specified in Annex I.

The Polish Government undertakes within twelve months to notify the Secretary General of the League of Nations whether or not Poland desires to adhere to either or both of the international conventions specified in Annex II.

Until Poland has adhered to the two conventions last specified in Annex I she agrees, on condition of reciprocity, to protect by effective measures the industrial, literary, and artistic property of nationals of the allied and associated States. In the case of any allied or associated State not adhering to the said conventions, Poland agrees to continue to afford such effective protection on the same conditions until the conclusion of a special bilateral treaty or agreement for that purpose with such allied or associated State.

Pending her adhesion to the other conventions specified in Annex I, Poland will secure to the nationals of the allied and associated powers the advantages to which they would be entitled under the said conventions.

Poland further agrees, on condition of reciprocity, to recognize and protect all rights in any industrial, literary, or artistic property belonging to the nationals of the allied and associated States now in force or which, but for the war, would have been in force in any part of her territories before their transfer to Poland. For such purposes they will accord the extensions of time agreed to in Articles 307 and 308 of the treaty with Germany.

ANNEX I.

Telegraphic and Radio-Telegraphic Conventions.

International Telegraphic Convention signed at St. Petersburg July 10–22, 1875.

Regulations and tariffs drawn up by the International Telegraph Conference signed at Lisbon June 11, 1908.

International Radio-Telegraphic Convention, July 5, 1912.

Railway Conventions.

Conventions and arrangements signed at Berne on Oct. 14, 1890, Sept. 20, 1893, July 16, 1895, and Sept. 19, 1906, and the current supplementary provisions made under those conventions.

Agreement on May 15, 1886, regarding the sealing of railway trucks subject to custom inspections, and protocol of May 18, 1907.

Agreement of May 15, 1886, regarding the technical standardization of railways, as modified on May 18, 1907.

Sanitary Convention.

Convention of Dec. 3, 1903.

Other Conventions.

Convention of Sept. 26, 1906, for the suppression of night work for women.

Convention of Sept. 26, 1906, for the suppression of the use of white phosphorus in the manufacture of matches.

Conventions of May 18, 1904, and May 4, 1910, regarding the suppression of the white slave traffic.

Convention of May 4, 1910, regarding the suppression of obscene publications.

International conventions of Paris of March 20, 1883, as revised at Washington in 1911, for the protection of industrial property.

International convention of Sept. 9, 1886, revised at Berlin on Nov. 13, 1908, and completed by the additional protocol signed at Berne on March 20, 1914, for the protection of literary and artistic works.

ANNEX II.

Agreement of Madrid of April 14, 1891, for the prevention of false indications of origin on goods, revised at Washington in 1911, and agreement of Madrid of April 14, 1891, for the international registration of trademarks, revised at Washington in 1911.

Article 20.— All rights and privileges accorded by the foregoing articles to the allied and associated States shall be accorded equally to all States members of the League of Nations.

The present treaty, of which the French and English texts are both authentic, shall be ratified. It shall come into force at the same time as the treaty of peace with Germany.

The deposit of ratifications shall be made at Paris.

Powers of which the seat of Government is outside Europe will be entitled merely to inform the Government of the French Republic through their diplomatic representative at Paris that their ratification has been given. In that case they must transmit the instrument of ratification as soon as possible.

A procès-verbal of the deposit of ratifications will be drawn up.

The French Government will transmit to all the signatory powers a certified copy of the procès-verbal of the deposit of ratifications.

Article 21.— Poland agrees to assume responsibility for such proportion of the Russian public debt and other Russian public liabilities of any kind as may be assigned to her under a special convention between the principal allied and associated powers on the one hand and Poland on the other, to be prepared by a commission appointed by the above States. In the event of the commission not arriving at an agreement, the point at issue shall be referred for immediate arbitration to the League of Nations.

In faith whereof the above-named plenipotentiaries have signed the present treaty.

Done at Versailles, [June 28, 1919,] in a single copy which will remain deposited in the archives of the French Republic, and of which authenticated copies will be transmitted to each of the signatory powers.

(5) Franco-American-British Treaty. On 28 June 1919 treaties were concluded at Versailles between Great Britain and France, and between the United States and France, by the terms of which the two great powers pledge immediate aid to France in the event of an unprovoked act of aggression by Germany. The treaties were signed at the same time as the German treaty and were published to the world on 2 July. The treaties are to be submitted to the Council of the League of Nations, which will decide if they are in conformity with the Covenant of the League. Italy was resentful because she was not included and hints were given out that one effect would be to drive Italy into alliance with Germany. In the United States those who opposed the League of Nations pointed to these treaties as proof of their contention that the proposed League of Nations was ineffective. The text of the treaty between France and the United States is as follows:

Considering that the United States of America and the Government of the French Republic are equally animated by a desire to maintain the peace of the world, so happily restored by the treaty signed at Versailles on June 28, which put an end to the war begun by the aggression of the German Empire and terminated by the defeat of that power, and

Considering that the United States of America and the Government of the French Republic, fully convinced that an unprovoked aggression directed by Germany against France would not only violate at the same time the letter and spirit of the Versailles Treaty, to which the United States and France are parties, thus exposing France anew to the intolerable burden of unprovoked war, but that such aggression on the act reputed by the Treaty of Versailles as being against all the powers signatory to the treaty and calculated to trouble the peace of the world, involving inevitably and directly the States of Europe and indirectly the entire world, as experience has amply and unhappily demonstrated, and

Considering that the United States of America and the Government of the French Republic apprehend that the stipulations concerning the left bank of the Rhine cannot assure immediately to France, on the one hand, and to the United States, on the other, as signatory powers to the Treaty of Versailles, appropriate security and protection;

Consequently, the United States of America and the Government of the French Republic, having decided to conclude a treaty to realize these necessary ends, Woodrow Wilson, President of the United States of America, and Robert Lansing, Secretary of State, specially authorized to that end by the President of the United States of America, and Georges Clemenceau, President of the Council of Ministers and Minister of War, and Stephen Pichon, Minister of Foreign Affairs, specially authorized to that end by Raymond Poincaré, President of the French Republic, have agreed upon the following:

Article 1.— The following stipulations concerning the left bank of the Rhine are contained in the Peace Treaty signed with Germany at Versailles, June 28, 1919, by the United States of America, by the Government of the French Republic, and by the British Empire, among other powers:

Article 42.— Germany is forbidden to maintain or construct any fortifications either on the left bank of the Rhine or on the right bank to the west of a line drawn fifty kilometers to the east of the Rhine.

Article 43.— In the area defined above the maintenance and the assembly of armed forces, either permanently or temporarily, and military manœuvres of any kind, as well as the upkeep of all permanent works for mobilization, are in the same way forbidden.

Article 44.— In case Germany violates in any manner whatever the provisions of Articles 42 and 43 she shall be regarded as committing a hostile act against the powers signatory of the present treaty and as calculated to disturb the peace of the world.

In case these stipulations should not assure immediately to France appropriate security and protection, the United States of America shall be bound to come immediately to her aid in case of any unprovoked act of aggression directed against her by Germany.

Article 2.— The present treaty, couched in terms analogous to those of a treaty concluded on the same date and to the same end between Great Britain and the French Republic, a copy of which is hereto annexed, will not enter into force until the moment when the latter is ratified.

Article 3.— The present treaty must be submitted to the Council of the Society of Nations and must be recognized by the council, deciding if occasion arise by majority, as an engagement in conformity with the covenant of the society. It will remain in force until, upon demand of one of the parties to the treaty, the council deciding if occasion arise by a majority, finds that the society itself assures sufficient protection.

Article 4.— The present treaty shall before ratification be submitted to the Chambers of the French Parliament for approval and it shall be submitted to the Senate of the United States of America at the same time as the treaty of Versailles shall be submitted for assent to ratification. Ratifications shall be exchanged at the time of deposit in Paris of the ratifications of the Treaty of Versailles, or as soon afterward as possible.

Then follow the signatures of M. Clemenceau, M. Pichon, Mr. Wilson and Mr. Lansing.

(6) The Brest-Litovsk Treaty. Soon after the *coup d'etat* in Russia which resulted in the overthrow of the Kerensky government and the rise to power of the Maximalists (Bolsheviki), the German government took the initiative in peace pourparlers with the new government. On 15 Dec. 1917 an armistice was signed by Germany, Austria-Hungary and the Bolsheviki, which was to last until 17 Feb. 1918, during which period of two months the terms of peace could be discussed and embodied in a treaty. The demands of the Central Powers were such that the Russian Soviet government refused to grant them. On 10 Feb. 1918 the Russians announced that they had withdrawn from the war without signing a peace and Russian troops on all fronts were ordered to demobilize at once. To this unprecedented attitude of a nation negotiating peace the Central Powers answered that Russia's abrupt withdrawal from the discussions at Brest-Litovsk constituted a breach of the armistice conditions and consequently a state of war existed. On 17 February Germany began a new invasion of Russia, and Turkey invaded the Caucasus on the 23d. Trotsky, the People's Commissioner (Bolshevik Minister of War) urged the peasants and workers to resist, but Lenin, the Russian Premier, was able to induce the Central Soviet Committee to accept the terms offered by Germany. The Germans ended their advance on 3 March 1918 and on the same day the Treaty of Brest-Litovsk was signed. The Entente obliged Germany to renounce this treaty under the drastic terms of the Treaty of Versailles signed 28 June 1919.

It is of more than passing interest in view of the fact that it was the only treaty resulting from the Great War that was based on the formula of "no annexations, no indemnities, and self-determination." The formula as interpreted by Germany during 1918 proved deceptive.

The chief provisions of the treaty are as follows:

I. The state of war between the Bolsheviki and the Central Powers is terminated.

II. The high contracting parties agree to refrain from all agitation against the other signatory governments.

III. Russia cedes all claim to Esthonia, Finland, Livonia Courland, Lithuania, Russian Poland, and Ukrainia. Furthermore Russia promises not to interfere in the internal affairs of these districts. Germany and Austria is to decide, their status agreeable to the wishes of their respective populations.

IV. After the conclusion of a general peace the Central Powers agree to evacuate all other Russian territory occupied by them. Russia agrees to evacuate all Anatolian provinces and return them to Turkey. Russian Armenia is also to be evacuated and allowed self-determination in agreement wiih Turkey.

V. Russia will without delay carry out the complete demobilization of her army. Russia will further transfer her warships to Russian harbors and leave them there until a general peace or immediately disarm. Warships of states continuing in a state of war with the Quadruple Alliance will be treated as Russian warships in so far as they are within Russian control. Shipping routes are to be kept permanently free from floating mines.

VI. Russia undertakes immediately to conclude peace with the Ukrainian People's Republic and to recognize the peace treaty between this state and the powers of the Quadruple Alliance. Ukrainian territory will be immediately evacuated by Russia. The Aland Islands fortifications are to be removed with all possible dispatch.

VII. The political and economic independence and territorial integrity of Persia and Afghanistan are to be respected by the contracting parties.

VIII. Prisoners of war of both sides will be repatriated.

IX. The contracting parties mutually renounce indemnification of their war costs.

X. Diplomatic and consular relations will be resumed immediately.

XI. The prescriptions contained in Appendices 2 to 5 shall govern the economic relations between the powers of the Quadruple Alliance and Russia.

XII. The restoration of public and private relations, interned civilians, etc., will be regulated by separate treaties with Russia.

XIII. This article is in regard to the authoritative texts, in German, Russian, Hungarian, Bulgarian and Turkish, specifying the relations in which each shall govern.

XIV. The present treaty will be ratified and ratifications exchanged as soon as possible in Berlin. The treaty enters into force on its ratification.

The signatures of the plenipotentiaries are attached.

For the results of the operation of this treaty see THE EASTERN FRONT (p. 381) this section. For its renunciation by Germany see (1). Treaty with Germany in this article.

19. AMERICAN NEUTRALITY. When the European War broke out in August 1914, it immediately drew into the circle of its operations and influences all the civilized nations of the world. Eventually three powers were allied with Germany and 27 states declared war upon her. Italy remained neutral for a year and China for four years: otherwise the only country significant in a military sense that kept out of the war was the United States; and that power at once found itself entangled in the net of European diplomacy, because it was not to the interest of the great belligerents to foster neutral rights, and because the intensity of the war made real neutrality almost impossible.

Attitude of the American People.— Some German-Americans would have liked to see the United States at least apply a brand of neutrality favoring Germany. A small but eminent group of Americans from the first believed and urged that the United States should go to the rescue of Great Britain, and incidentally of France, as the belligerents who were closest to us in history and policy. By far the greater part of the American people, however, insisted upon maintaining the neutrality traditional in all European conflicts. Neutrality was observed by the American government with little difficulty or friction in the 11 wars,— eight European, one Asiatic and two African, to which one or more European powers were parties after 1854.

The United States was further committed to stiff principles of non-interference by its policy during the Civil War from 1861 to 1865. The nation then went to an extreme in resentment at what was thought to be a premature recognition by Great Britain of the belligerent status of the Southern Confederacy. In the effort to check the trade of neutrals with the enemy it insisted on restrictions, especially as to "continuous voyages," which proved inconvenient when it became a neutral in 1914. On the other hand, the United States during the Civil War insisted on standards of strict accountability for the building and dispatch of vessels of war by neutral nations, and subsequently claimed and received an indemnity for the slackness of Great Britain in that particular (see INTERNATIONAL CLAIMS AND DISPUTES).

As a nation with a vast and expanding import and export trade it was the interest and policy of the United States, when the Great War broke out, to preserve the broad privileges to which was given the general term "freedom of the seas." In every considerable war for many years fighting populations had drawn food and other supplies from the United States: hence commercial reasons combined with the traditions of the nation to make the government and people stand by the policy of impartial trade with all belligerents, and to insist on strict construction of the limitations on naval warfare.

Principles of Neutrality.—A hard struggle, lasting for centuries, gradually built up among nations the idea that neutrality is an international right, and not simply a privilege. The slow gains made were swept away by the Napoleonic Wars, in which all the nations of Europe, as well as the United States of America, were at one time or another drawn into active warfare. When large-scale wars were renewed, beginning with the Crimean War in 1854, strong neutral powers, some of them with considerable ocean trade, insisted on rights which were enlarged by international agreements. The general congresses of Paris in 1856, and of Berlin in 1878, and particularly The Hague Conferences of 1899 and 1907, made new definitions of the rights and duties of neutrals; so that in 1914 there was a body of international law upon this subject recognized throughout the world. The most important of these principles are as follows:

A. *General Principles.*—(1) Every sovereign nation has a right to abstain from war, even though its closest neighbors are in combat. No previous friendship or trade relations or commercial treaties require any power to join in a war in which it was not otherwise involved. To remain neutral is unfriendly to nobody.

B. *Neutral Trade.*—(2) Citizens of neutrals

who happen to be in belligerent countries are entitled to protection and to the advantage of commercial and other treaties with those belligerents.

(3) Neutrals on the other hand are bound to refrain from "unneutral acts" which might give aid and comfort to any of the belligerents. No military expeditions are to be prepared on their soil; no ships of war to be built or fitted up; no passage is permitted to belligerent troops across neutral territory; no hostilities allowed by land or sea within the territorial restrictions of the neutrals.

(4) Hospitals and Red Cross services are exempt from capture; and neutrals engaged in such service are to be respected.

(5) The neutral preserves the right of continuing intercourse in goods or persons, by land or sea, by railroad or by ship, with all the belligerents, subject to the limitations on sea commerce described below.

(6) Neutral vessels capturable at all are entitled to an adjudication by a prize court. The vessel is to be preserved if possible, and the passengers and crews must be taken off in safety.

(7) By the Declaration of Paris (16 April 1856), the signatory powers (not including the United States) agreed not to use privateers for the capture of merchant vessels.

(8) Enemy's vessels and enemy's property in such vessels are liable to capture anywhere on the high seas. The efforts to prohibit capture of private property at sea were unsuccessful.

(9) Enemy's property (except contraband) is safe from capture in neutral ships.

(10) Neutral goods (except contraband) are safe from capture in enemy ships.

C. *Freedom of the Seas.*— Neutral commerce is subject to three very important limitations as follows:

(11) Contraband, that is, commodities and persons directly intended or adapted for military purposes, are capturable even if owned by a neutral or in a neutral ship.

(12) A blockade of any port or coast by a belligerent is considered directly a military operation so that neutral vessels bound in or out are subject to capture anywhere on the high seas. Blockades in order to be binding must be effective.

(13) Neutral goods, if contraband in nature, may by the doctrine of continuous voyages be captured if bound from one neutral port to another, where the ultimate destination is a belligerent port.

(14) The definition of contraband was uncertain in 1914. In the Conference of London in 1911, an international Declaration was drawn under the leadership of Great Britain, which made careful distinction between "contraband," "conditional contraband" and "non-contraband"; but this document was subsequently withdrawn by the British government before ratification. The progress of the art of war has added many commodities to the group of materials plainly intended for war; and it has always been a debatable question whether food is necessarily contraband.

Not all of these principles were admitted by all nations; but, with the exception of privateering, which played no part in the Great War, they were substantially held by the American government in 1914, and had been applied by it in the Spanish War of 1898 and claimed in other wars to which the United States was not a party. The statute books contained a series of provisions for enforcing the neutrality of the United States by penalties on those who might aid the belligerents. Unfortunately the neutrality statutes of the United States, as pointed out early in the war by the Attorney-General, were defective and inadequate. They date back to 1794 with a revision in 1797 and additions in 1818. This body of law was substantially incorporated into the revised laws of 1878 and was in force in 1914. In spite of the advice of the Department of Justice, the only new statute enacted during the period of the neutrality was that of 4 March 1915, authorizing the withholding of clearances where "there was reasonable cause to believe" that the cargo was intended to supply belligerent vessels of war at sea.

Diplomatic Intercourse.—At the outbreak of the war Great Britain, Austria and Germany requested the United States to represent them in enemy countries, and Turkey, Serbia and other countries made like requests. This threw upon the United States a large responsibility with reference to individuals and property of citizens of one state in the territory of an enemy, and also made the United States ministers intermediaries in questions relating to the status and treatment of prisoners of war and of civilians arrested and interned. In addition the American ministers in all the belligerent countries represented the general interests of the United States as a neutral, and were the channel for claims of the owners of ships and cargoes which were seized or captured.

An early duty thrown upon the officials and the government was that of aiding American travelers stranded in Europe, particularly in Germany and Austria, at the outbreak of hostilities. Congress appropriated $2,750,000, and the government chartered ships to bring home those who could not obtain passage on the regular lines. By these means all stranded travelers and others who wished to come to America were brought across the Atlantic.

Another unexpected service of American diplomatic and consular officials was in the territories, especially in western Europe, occupied by the Central Powers. Minister Brand Whitlock was ordered to remain at his post in Brussels even when all but a fraction of the kingdom of Belgium was occupied by the Germans. Germany could not refuse to recognize him without admitting that Belgium was considered a conquered and extinguished nation. Official and unofficial agents of the vast system of relief organized for the people of Belgium and northern France were also unwillingly received by the Germans, who permitted both belligerent England and neutral United States to feed the population which was deprived of its means of life by the German invasion. Upon Ambassador James W. Gerard was thrown the heavy responsibility of representing the United States in Berlin. Efforts were made to cajole him and also to brow-beat him. On one occasion the emperor suddenly approached him with the remark: "America had better look out after this war. I shall stand no nonsense from America after this war." Upon the American ministers in Holland, Russia, Serbia, Bul-

garia, Rumania, fell very difficult duties. Ambassador Morgenthau in Turkey was toward the Armenians as a protector of oppressed peoples in their country. Besides these official representatives, Colonel House, the personal friend and representative of President Wilson, several times visited England, Germany and other countries upon special and private missions.

The representatives of the belligerent nations in the United States made every effort to advance the cause of their respective countries. They addressed themselves first of all to the raising of loans. President Wilson at one time used his influence to prevent the placing of foreign loans, but no principle of international law forbids neutrals to lend money to belligerents, and the Allied loans were very popular, because the proceeds were at once invested in the purchase of military supplies and food in the United States. The rising tide of feeling against Germany greatly interfered with the German loans. The diplomatic representation of the Central Powers was able. Count von Bernstorff, the German ambassador, made his legation the centre of legal propaganda, but several of his subordinates were dismissed from the country by the United States government. Dr. Dumba, the Austrian ambassador, was likewise dismissed. Several consuls of both countries were convicted of breaches of the neutrality laws and sent to prison. Toward the end of the neutral period (19 Jan. 1917) Count Bernstorff forwarded to the German minister in Mexico an official order from the German foreign office to make an alliance with Mexico and if possible with Japan, for war on the United States, adding: "it is understood that Mexico is to reconquer the lost territory in New Mexico, Texas, and Arizona." The Turkish Ambassador, Rustem Bey, was dismissed in 1914 for a criticism on the conduct of the State Department here. Various unofficial agents of the German government were sent over to work upon public opinion in the United States, particularly Bernhard Dernburg, who formerly lived in the United States. Several prominent unnaturalized Germans who made their homes in America, and a few who were naturalized, were open or secret agents of the German government.

Public Announcements of Neutrality.— The general European War practically began when Germany declared war on Russia, 1 Aug. 1914. On 4 August, without waiting for the announcement of the final decision by the British government, President Wilson issued the first of a series of Proclamations of Neutrality. In them he set forth the friendship of the United States for the contending powers, the status of citizens of the United States in territories of the belligerents, and of belligerent subjects within the jurisdiction of the United States and the need of "impartial neutrality." He then laid down a series of injunctions upon persons within the United States. They were warned not to accept a commission or to enlist in the service of either belligerent or induce other persons so to do; or to fit out vessels for the service of the belligerents, or to increase the force of any belligerent publicship entering the United States; or to prepare a military enterprise to be carried on from the United States. In addition, belligerent vessels of war were warned not to use the waters of the United States for hostile purposes. All citizens of the United States and all other persons within its limits were enjoined to commit no acts in contravention of treaties of the United States and the national statutes against unneutral acts. All persons were warned that they would have no "protection from the Government of the United States" against the consequences of their misconduct. Two important limitations on these requirements were stated. In the opening sentences of the proclamation appears the reservation, "without interfering with the free expression of sympathy or with commercial manufacture or sale of arms or munitions of war." Toward the end the President reiterated the right to sell and ship contraband of war and to break a blockade, at the risk of capture and the resultant penalties.

Similar proclamations were issued from time to time as additional countries entered the war. In addition the President on 5 August began a series of special proclamations, the first prohibiting the radio stations from "handling messages of an unneutral nature." On 14 August a circular was issued in rather uncertain terms on the liability of former citizens of the belligerent powers to render military service. On the 17th instructions were sent out to diplomatic and consular officers in the belligerent countries. On the 18th an act was approved by the President permitting the registry of foreign-built ships in the United States, thus allowing the acquirement of an American status.

On 15 October the Department defined the attitude of the government on the shipment of contraband, reaffirming the doctrine that there was no duty under international law to prevent such traffic. Many additional proclamations set forth the position and the decrees of the government, and the President in public addresses insisted on the neutral policy of the country. He even went so far as to issue a proclamation (18 Aug. 1914), in which he urged his fellow countrymen to avoid that "deepest, most subtle, most essential breach of neutrality which may spring out of partisanship or out of passionately taking sides,— we must deal impartially in thought as well as in action." So far as precept could go, the United States did everything that was correct and traditional.

Difficulties of Neutrality.— Little heed was paid to the President's injunction to preserve a neutrality of thought. Most Americans from the beginning had a strong preference on one side or the other, and two positive causes created a strong current of public feeling against Germany. These were the occupation of Belgium in the early days of August; and the treatment of non-combatants in the portions of Belgium and France occupied by the German army.

The invasion of Belgium was contrary to the general principle of the right of a nation to remain neutral if it were not concerned in the outbreak of the war; and it was also a gross violation of the obligation of treaties. The contemptuous phrase of the German chancellor that treaties were "only a scrap of paper" was a blow at the sanctity of all obligations of nations.

The United States, however, was not a signatory of the Treaty of 1839 by which both

Germany and Great Britain guaranteed the neutrality of Belgium. The Hague Conventions on the rights of neutral powers, though signed by the United States, could not be reasonably construed to require this country to make war on Germany. Otherwise the Germans had the legal power to compel the United States to go to war by interfering with a third power. The general right of belligerents to keep up commerce with neutral powers is of course subject to and conditioned by their physical ability to protect direct trade in their merchant ships. A few days after the beginning of the war the allied British and French navies showed such an overwhelming superiority at sea that the German shipping which could not reach home ports took refuge in any neutral waters that offered. Except on the Baltic and a little coasting trade in the German Ocean to Holland and the Scandinavian countries, the movement of German merchant ships ceased all over the world. A few German commerce destroyers were let loose, but all of them were eventually captured or driven to port. No transoceanic or Mediterranean commerce could be kept up by the ships of Germany and her allies. This change in the conditions put a strain on American neutrality. Goods could still be shipped to Germany in neutral vessels, but contraband cargoes were liable to capture by the Allied cruisers. This introduced a complication in the trade in arms and military supplies which quickly sprang up from the United States. Shippers had the same legal right to ship to Germany or to England, but none of the German cargoes could reach their destination if contraband; while practically all the English cargoes went safely.

Without altering a syllable of the proclamations, without any deviation from the received principles of international law, this state of things was very advantageous to the Allies as against the Central Powers. As a great exporter it was clearly the interest of the United States to claim a liberal construction of contraband. Cargoes of food not earmarked for military consumption were considered in the United States to be free from capture; and, if sent in American bottoms, also free from search or detention, even if paid for. The Allied powers at once began to create difficulties for shipments of all kinds from the United States even to other neutral powers. The result was confusion in the treatment of American cargoes and vessels, and controversy over the right to ship munitions of war.

Another and very serious difficulty was the conduct of the German and Austrian diplomatic and consular officials and secret agents, who entered on a propaganda intended to rouse the German-Americans, both aliens and citizens, and to put a pressure on the government in Washington to take ground with regard to neutrality which would be favorable to Germany.

A further complication was bringing forward the "law of necessity." Both groups of belligerents argued that their victory was so necessary for the welfare of mankind that they were justified in cutting down the privileges of neutrals; and that it was no time to stand on the niceties of international law, when the keeping up of the German army or the British navy was at stake.

Above all, the contest in Europe speedily became so terrible that it was impossible for the people of the United States to ignore the plain fact that the interests of their country were involved and that the success of either side would mean a great change in international relations. The war soon ceased to be European. It aroused every thinking man and woman. It revived influences of race and birth. Nobody was really neutral, nobody felt indifferent as to the outcome of the struggle, and, therefore, no voter and no statesman could be vitally neutral.

Freedom of the Seas.— During the Civil War, from 1861 to 1865, the United States, as a belligerent, set precedents of restricting the movement of neutral commerce. In 1914 the American foreign trade amounted to nearly $2,500,000,000 in exports and nearly $2,000,000,000 in imports. Hence the natural tendency of the administration was to insist on the "freedom of the seas." This phrase in times of peace means simply that by the common consent of all nations, the open sea, outside a line of territorial jurisdiction, usually stated as three marine miles beyond the low-water mark, was free to everybody for fisheries and for passage.

So far did this principle go that certain narrows, as for example the straits leading from the North Sea into the Baltic, though less than six miles wide, were part of the universal seas. Associated with this idea was the right of approach to the coast of every country for purposes of trade, and the right of vessels to be received in foreign harbors. Attempts of nations like China and Japan to forbid the approach of foreign vessels were repelled by threats and even by war.

In time of war the freedom of the seas was much more significant, for it included the right of a neutral to use the high seas as a free waterway to the ports of other neutrals or belligerents, and also to navigate in areas where belligerent vessels were moving about.

As soon as the war began, a series of limitations was placed by both belligerents on this free use of the world's waterway. In the first place, all the vulnerable coasts of the belligerents were protected by mine fields extending far beyond the three-mile limit, thus reserving long belts of water from commerce. Gaps and lanes were left in these belts, however, through which vessels could pass in and out under pilotage. The next disturbance was due to the presence of vessels of war in the North Sea and Mediterranean. Where fighting was going on, it was plain that merchant vessels must move at their own risk. Great Britain (13 Oct. and 4 Nov. 1914) announced that "owing to the discovery of mines in the North Sea, the whole of that sea must be considered a military area. Merchant shipping of all kinds will be exposed to the gravest dangers." All ships were warned not to pass a line drawn from the Hebrides to Iceland. There was no threat of capture for vessels that ignored the notice; they were simply warned that Great Britain would take no responsibility if they were destroyed accidentally.

The Germans made this an excuse for a

proclamation (4 Feb. 1915) to the effect that "the waters surrounding Great Britain and Ireland including the whole English Channel are hereby declared to be a war zone." Enemy merchant vessels in the war zone could be destroyed without rescuing passengers and crews. An accompanying "memorial" held that Great Britain had in various ways violated the international law of naval warfare, the neutral powers had not insisted on their own rights, and the German government would not be responsible if one of them should become "the victim of an attack intended to be directed against the vessels of the enemy."

One highly important stretch of water, the Straits of Dover and the English Channel, was throughout the war treated by the British government as in their sole military possession. Commerce was first restricted, and then compelled to find its way around the north of Scotland, which was a serious detriment to the trade of and with Holland.

The German assertion of sole control of broad areas of the sea was combined with aggressions on the right of neutral vessels to humane treatment if captured. The British zone did not seriously interfere with American commerce, and no protest was ever lodged against it by the United States government. Vigorous protests, however, were made against the German theory of the war zone by several European neutrals and (10 Feb. 1915) by the United States. The matter was somewhat complicated by the attempt of Germany to prevent the use of false flags, particularly the American, by the British. It appeared that this ruse, which had for centuries been frequent and was generally considered by international law to be innocent, gave offense to the United States which (22 February) asked both parties to discontinue the practice. No further trouble arose upon that question. The real grievance of Germany was that cargoes of American-made munitions were freely passing into English and French ports. Since it was not possible to stop them by capturing the vessels, they demanded the cessation of the shipments. In the correspondence on the war zone the German government warmly complained (1 March 1915) of the export of munitions of war to anybody; a long controversy followed as to the munition trade. The manufacture of powder, rifles, great guns, military equipment and machinery was an industry active in most of the great nations of the world. It had been a practice for many years that neutrals could supply belligerents with arms. In the wars of 1912 and 1913 in the Balkans the German Krupp firm sold cannon to the Turks and the French Creusot works sold to the Serbians.

International law was absolutely clear that there was no responsibility resting upon any government to forbid the manufacture and sale of munitions to any belligerent. Nevertheless, during the Mexican difficulties, under an act of Congress (14 March 1912) President Taft issued a proclamation "prohibiting the export of both arms and munitions from any port in the United States to Mexico." This was held by the State Department, however, not to apply to shipments consigned to the Mexican government. Subsequently (4 Feb. 1914) the order was rescinded by President Wilson.

The German government seized this precedent as proof that it was entirely within the discretion of the United States to prohibit the trade, which ran up the total exports of the United States to Europe in one year from $1,486,000,000 to $1,971,000,000, and in the next year (1915) to $3,547,000,000. To many Americans the traffic was unwelcome. The United States government refused to sell to the Allies 350,000 obsolete rifles, but the President repeatedly and officially stated that no such obligation lay on private parties. The Germans (4 April 1915) complained that "this industry is actually delivering goods only to the enemies of Germany" and suggested "an embargo on the exportation of arms." On 12 Aug. 1915 the State Department declined to accept as a general principle a theory which would preclude war except by countries which could supply themselves with military material. This answer was supported by a decision (Pearson vs. Allis-Chalmers Company et al.) in the Circuit Court of the United States for Wisconsin (May 1915), when the court declined to interfere with the shipment of shrapnel shells to the Allies.

The only approach to restriction that was reached by Congress was the act of 18 Sept. 1916 which authorized the President to retaliate against any country that prohibited the importation of American products by preventing the "importation of similar or other articles from the offending country." Otherwise, throughout the period of her neutrality the United States insisted on the freedom of the seas for shipments of munitions, subject to capture on grounds of genuine contraband or blockade or continuous voyage.

Personal Status.— One reason why the United States was so deeply concerned in the war was the presence within its boundaries of thousands of citizens of Germany, Austria, Bulgaria and Turkey, of whom a large proportion were unnaturalized and, therefore, remained alien subjects of the belligerent countries. A smaller number of English, French, Belgian, Russian, Serbian and Greek nationals presented the same problem of their rights and responsibilities in a neutral country. So far as the naturalized citizens and their minor children were concerned, the United States recognized no difference in their legal status from that of native-born citizens, with the exception that it declined to interfere in cases in Italy where the American-born son of a naturalized citizen who visited Italy was held for military service.

The serious question was that of the aliens, most of whom were men of military age, and large numbers of whom were borne on the rolls of their own countries as liable to military service. In the Balkan wars of 1912 and 1913 scores of thousands of subjects of the Balkan nations went home to fight; and the United States paid no attention to that movement. It was considered the right of an alien to return to his native country, whenever he felt like it, even though he thereby furnished material for armies in the field.

As soon as the Great War began and actually some time in advance, the German and Austrian authorities made preparations to send their men home. Formal notice was served upon those whom they could reach to report for that service. This was nearly a breach of neutrality; for it was in effect the enlistment

of soldiers for foreign service within the territory of the United States. The collapse of the German sea power at once put a stop to the wholesale transfer of these men; and the few who got out and tried to reach their home countries in disguise or by roundabout routes were nearly all picked up by Allied cruisers, who took the ground (accepted by the United States) that "reservists" were rightfully considered as in the military service of their own country and were, therefore, contraband of war. Large numbers of British subjects betook themselves undisturbed to England or crossed the border into Canada and enlisted there.

With them went thousands of American citizens who paid no attention to the President's proclamation against entering the military service of one of the belligerents. Some of them accepted commissions in the Canadian or British service, and thereby, under the terms of the United States statutes, forfeited their citizenship. This penalty was not applied at the time; and after the United States joined in the war, an act of Congress was obtained permitting such men to retain or resume their citizenship. In a few cases overzealous cruisers seized men who claimed to be American citizens as German or Austrian subjects. In the case of Piepenbrink (April 1915) the United States successfully maintained the right of protection, even though the man had only filed his first papers of naturalization, and was not yet admitted to citizenship. Several thousand Germans were employed as seamen or otherwise on board German ships that were in American ports when the war broke out or entered for refuge. Practically all these men were liable for naval service in Germany; but they were allowed to remain on board their ships or to stray off into the general population. A few of them found their way home and entered the German service.

Five German ships of war took refuge in American ports and their crews were interned to the end of the war. These were the *Geier* and *Locksun* (Hawaii, October 1914), the *Cormoran* (Guam, December 1914), the *Prinz Eitel Friedrich* (Newport News, March 1915) and the *Kronprinz Wilhelm* (Newport News, April 1915). A considerable number of the officers and some of the men broke the parole that they had given and escaped. The German embassy and the German government approved this breach of faith and excused it on the ground that the wording of the parole did not make the pledge equivalent to the German "Ehrenwort."

Several thousand Americans took part actively on the side of the Allies, and a few on the other side, by joining ambulance, medical and relief corps which were organized in America by individuals and societies, including the magnificent Red Cross Society. While not enrolled in the active armies, many of them served close up to the lines and under fire, and some were killed or wounded. Many entered the similar services and put on the uniforms of the belligerents. Others formally enlisted in the fighting branches.

Allied Restrictions on Neutral Trade.— The United States government as a neutral power found itself called upon to prevent certain forms of American trade, such as the sending out of provisions or other supplies to cruisers near the American coast. Several Germans were prosecuted and one of them (Buenz, agent of the Hamburg-American line) was convicted, for swearing to false manifests of the cargoes of ships expecting to leave the port of New York. Steps were also taken to prevent the dispatch of submarines as completed ships; although the shipment of fabricated parts to Canada, there to be assembled into submarines, was permitted. By an order of 14 Sept. 1914, the United States refused to give clearances to any merchant ships armed for self-defense, although such arming had been usual in earlier wars. Vessels, however, were allowed to carry a few small guns which could be used against a stern chase. Warships of all the powers were free to enter and leave port without augmenting their force; but the only German ship of war that was able to make use of this privilege was the fighting submarine U. 53, which put into Newport for a few hours in 1916. The merchant submarine *Deutschland* entered and cleared from Baltimore and from New London. The German merchant ship *Odenwald* attempted to put to sea from San Juan, Porto Rico (March 1915), but was compelled to return by the American batteries.

Nominally both the Central and Allied powers admitted the ships and commerce of the United States to their ports; actually, after the first few months of the war, very few ships reached German or Austrian ports; and it proved difficult to send cargoes to neutral ports, if of such a nature that they were likely to be re-exported to Germany or Austria.

The first serious controversy between the United States and Great Britain arose out of the detention of steamers in Gibraltar, and elsewhere, on the theory that it took time to go through the cargoes and select the contraband. Another grievance was that the British government seized neutral vessels and "illegally brought them within its territorial jurisdiction, compelling them to submit to the laws and regulations of that nation."

In a dispatch of 25 Oct. 1915, the United States assumed a championship for general neutral rights, in accordance with "established rules of international conduct upon which Great Britain in the past has held the United States to account." The State Department further declined to yield to the plea that "the exceptional geographical position of the enemies of Great Britain require or justify oppressive and illegal practice." The British government was referred to the policy of the United States upon this subject during the Civil War. There was further complaint that the British prize courts did not make their decisions upon the general principles of international law, but were guided by the Orders in Council of the British government from time to time.

On the question of unreasonable delays, the British government gave way, by directing more expedition and discrimination in the search of cargoes. The same result was reached, after some effort, with regard to interference with parcels and letter mail. The British government set up a regular practice of taking off the mails in either direction between the United States and Dutch and Scandinavian ports. This led to a formal protest by Secretary Lansing

(4 Jan. 1916) insisting that «mails are not to be censored, confiscated or destroyed on the high seas, even when carried by belligerent mail ships.» The British government (4 April 1916) replied with the not very convincing argument that as much as 800 pounds of rubber had been sent in a single parcel post; they insisted on a right to open any sealed package which appeared to contain goods; but promised no longer to seize «real correspondenie.» Similar protests were made against the censorship of telegrams transmitted by cable and wireless, including money transfers. This whole question was complicated with the seizure of dispatches and private papers of unofficial agents who in many cases were spies of the German government. The documents of accepted ambassadors and agents were not thus restricted; though when the German Ambassador, von Bernstorff, returned to Germany in April 1917, under safe conduct, his baggage was searched at Halifax and correspondence which, in the judgment of the British authorities, was unofficial was seized.

Another difficulty arose from the seizure of certain subjects of the Allies on board American ships. The most serious case was that of a party of German and Austrian subjects bound from the Orient to the United States on board the United States merchant ship *China* (1916). They were not military officials, and on the protest of the United States, they were eventually released.

Controversies over Contraband.— The failure of Great Britain to give sanction to the report of the London Conference of 1911 on contraband left that subject in a state of confusion at the outbreak of the war; for there was no clear understanding as to the status either of military material or of food. As the war progressed it became evident that many articles in common use in time of peace were also essential to the conduct of the war, such as automobiles, copper, flying machines, rubber and iron; and also that where all the available male population was enlisted in the army the distinction between food intended for the civil population and that intended for the army or navy no longer existed.

With the Central Powers there was little opportunity to test new theories of contraband. The only significant case was that of the sailing vessel *William P. Frye,* an American ship which, 27 Jan. 1915, was captured by the Germans loaded with wheat from Portland, Ore., the property of an American citizen, bound to English ports «for orders.» The German officers at first decided that the food cargo was contraband, and began to throw it overboard. They then changed their minds and sunk the ship with most of the cargo. The American government forthwith protested (31 March 1915) and demanded full damages for the value of the ship and the destruction of the cargo. The German government (5 April) held that the cargo was «conditional contraband» according to the Declaration of London. It then took up the Prussian-American treaty of 1828, under which it admitted that it was not authorized to capture the property of Americans even though contraband, although the United States had made no claim under the treaty. A tedious correspondence followed. The German prize court justified the seizure of the cargo and the destruction of the ship under international law, but admitted responsibility under the treaty. Arbitration was proposed, but no settlement was reached prior to the declaration of war by the United States in April 1917, which superseded any other proceedings.

Much more serious were the difficulties over contraband with the Allies, and especially with Great Britain, which became the recognized agent for the Allied Powers. On 7 Aug. 1914, the American government proposed to both groups of belligerents to adopt the definitions of contraband in the Declaration of London; with its classification into «absolute contraband» —arms, military equipment and warships; «conditional contraband»— food, clothing and materials for transportation by land and sea; and «non-contraband»— raw cotton and other textiles, rubber, hide, ores, paper, soap, etc., and also articles to aid the sick and wounded. The Germans accepted this proposition and that is why they tried to apply the Declaration of London to the Frye case.

The British reserved the right to make «additions and modifications» to the list in the Declaration. By an Order in Council of 24 Oct. 1914 much more stringent rules were laid down as to the effect of the destination of neutral vessels. From time to time thereafter, the British altered the lists to the growing disadvantage of Germany. Oil, being the fuel for motors and air ships, was early made contraband, raw cotton (21 Aug. 1915), wool, tin, castor oil, paraffin wax, lubricants, hides and ammonia (11 March 1915), and many other articles. France, Russia and Italy followed in the same path. The Germans abandoned the Declaration of London, and made up lists closely resembling the British (18 April 1915).

Had the British lost control of the sea, it would have gone hard with the American export trade under this severe doctrine of contraband; but England and France offered good cash markets for almost anything the Americans had to sell, irrespective of contraband. The pinch came when the British began to use nominal principles of contraband to cut off non-contraband trade to neutrals. On 28 Dec. 1914 the American State Department lodged a protest against the extension of contraband, which, however, carefully refrained from discussing increases in the number of articles held contraband; it confined itself to the stoppage of ships bound on what Americans claimed were innocent voyages to neutrals. The British argument was that it was necessary to retaliate against and undercut the German practices; and that the statistics of export from the United States to Holland, Scandinavian powers and Italy showed vast increases, which could only be available for re-export to Germany. They also justified the stoppage of food shipments, when applied to a nation in arms like Germany, as necessary for the success of the policy of starving out Germany.

The prohibition of cotton was a heavy blow to the American producer, though the argument that cotton was raw material for explosives proved to be justified. The United States continued to insist that ordinary food shipments were not contraband; that to seize shipments and then reimburse the owners did not

relieve Great Britain from responsibility to our government; and that there was no right to seize cargoes simply because they might eventually reach the enemy. Later on Great Britain treated money and securities as contraband, which, up to this time, had not been definitely looked on as subject to capture in neutral vessels and was a striking addition to the ordinary principles of international law. There was, however, no redress from any of these seizures during the period of neutrality; and when the United States associated itself in 1917 with the Allied Powers, any claim for later adjustment or indemnity on the ground that the British system was contrary to international law and the rights of the United States became exceedingly unlikely.

The Submarine Question.— The question of blockade did not stand by itself; in its extensions and applications it was adopted by Great Britain as a practical means of meeting a new and dangerous system of maritime warfare. For many years American inventors followed by Europeans had been working on a practicable form of submarine boat, which could discharge a self-propelling torpedo under water. When the war broke out, Great Britain had a fleet of submarines, but her regular warships disposed of the German commerce and it was found impracticable to use the submarines in attacks on the German coast, chiefly because of mines. Since the Germans were unable to keep commerce destroyers at sea, except in a few cases and for a brief period, they sought to employ their submarines against Allied commerce. The German war-zone order of 4 Feb. 1915 was a prelude to a systematic policy of hunting out belligerent merchantmen with submarines. The British held this to be an unauthorized and illegal form of warfare, and President Wilson later laid down the rule that any use of submarines as commerce destroyers was contrary to international law. To this the German reply was that it was lawful to use a new maritime weapon, and that it was justified further as a retaliation for the illegal action by the British.

The British Order in Council (11 March 1915) on that subject professed to be founded on a German order of 26 January, by which a government agency was created to take entire charge of and distribute corn, wheat and flour. The British declared that this system nationalized the German food supply and made legal a policy of intercepting all food cargoes.

Both the German and the English practices seriously affected the export trade of the United States, and the controversy was further aggravated by the seizure by the British government of the ship *Wilhelmina* (9 Feb. 1915) on a voyage from New York to Hamburg. Much later it was proved that the *Wilhelmina* was not entitled to American register, but that question did not enter into the early proceedings. To the principle of the right to stop all food supplies going to Germany by any captures necessary to that end, the British government adhered to the last. Other important cases of American vessels seized or detained, which became the subject of diplomatic controversy, were the *Neches* (July 1915) bound from Rotterdam to the United States; the *Seguranca* (April 1915) bound to Holland but not consigned to the Netherland Trust, and the *Wico* (March 1915) with oil for Sweden. In all these cases the United States lodged a protest.

The submarine controversy quickly took on a new form through official orders from the German government to destroy belligerent merchant ships without the safeguards of capture at sea required by international law. No hail nor demand for surrender was thought necessary by the Germans; no chase was required; no examination of the papers to ascertain the character or cargo of the ship; no attempt to put a prize crew on board and send the capture into a German port for the action of a prize court; no opportunity to the crew and passengers to save their lives was obligatory on the German commanders. These bold deviations from the accepted law of nations could not fail to involve neutral vessels, for no proper precautions were taken to distinguish between neutrals and belligerents. The Entente Allies at once protested that these methods were illegal and barbarous. The United States was speedily drawn in by the sinking of the British ship *Falaba* in Saint George's Channel (28 March 1915), causing the loss of 111 lives, including an American citizen. On 28 April, the American ship *Cushing* was attacked by a German airship. On 1 May the American steamer *Gulflight* was torpedoed without notice. On 2 and 10 April the steamer *Greenbriar* was destroyed by a mine near the German Coast. On 10 April the *Harpalyce*, a British ship bearing relief to the Belgians from the United States, was sunk on her return voyage, apparently by a submarine.

Protests were at once lodged and the Germans appeared disposed to make some reparation, when (7 May 1915) the British steamer *Lusitania* was torpedoed without notice off the Irish Coast, and sank in a few minutes with a loss of 1,195 lives, of whom 114 are believed to have been American citizens. As soon as the facts were established the United States government protested. President Wilson in a public address (11 May) tried to calm the excitement, saying "There is such a thing as a man being too proud to fight"; but on the same day he completed a note (issued 13 May), absolutely denying the right to destroy either belligerent or merchant ships without notice, and calling on Germany to disavow the sinking. The President added, "The Imperial German Government will not expect the Government of the United States to omit any word or any act necessary to the performance of its sacred duty of maintaining the rights of the United States and its citizens and of safeguarding their free exercise and enjoyment."

This was the beginning of a long diplomatic controversy. (The principal American dispatches are dated 13 May, 9 June and 21 July). To each of these the Germans replied, beginning with a defense of the sinking of the *Lusitania* on the general ground of the right to destroy an enemy vessel in the only way that was safe for the crew of the submarine, and insisting that the *Lusitania* was a public armed vessel, carrying contraband. The Germans laid down the doctrine that neutrals who traveled on belligerent ships took their chance of destruction and particularly insisted that Germany had no responsibility to the United States,

for a printed notice had been sent out by the German Embassy warning Americans not to take passage on that particular ship.

Secretary Bryan soon found himself out of agreement with the President's strong remonstrances and repeated suggestion that such acts would lead to war; and he resigned (9 June 1915). Mr. Robert M. Lansing was appointed Secretary of State, but from this time it was understood that the vital dispatches on international questions were drawn by President Wilson. A decision by the Federal District Court of New York (*In re* Cunard Steamship Company 15 Aug. 1915) held that in fact and law the *Lusitania* was an unarmed merchant vessel.

The main point at issue in the controversy was the insistence by the United States that submarines must submit to the usual processes of boarding a prize, and must send the capture in for adjudication, unless (as was usually the case in captures by submarines) circumstances made it impossible. Destruction of the ship was only allowable after the crew and passengers were given a reasonable opportunity of escape. The United States also stood by the principle that, as in times past, neutrals were entitled to avail themselves of belligerent merchant ships for employment or for passage.

In the face of this persistent assertion of rights the Germans slowly gave way, although the negotiations were interrupted (19 Aug. 1915) by the torpedoing without warning of the British ship *Arabic*, causing the loss of three American lives; for this act the German government made an apology. On 1 Sept. 1915 the German ambassador filed a memorandum in Washington in the following words: "Liners will not be sunk by our submarines without warning and without safety of the lives of non-combatants, provided that the liners do not try to escape or offer resistance." This was accepted as a German withdrawal from the submarine policy. On 8 Nov. 1915 the ship *Ancona* was sunk by an Austrian submarine, and Austria in like manner eventually apologized. During the next few months there were some minor cases, in which the facts were less clear. The controversy blazed up again on the torpedoing without notice of the British packet *Sussex* in the English Channel (24 March 1916) with loss of American lives. With great reluctance the German government at last admitted that a German submarine was responsible and promised amends.

Doctrine of Continuous Voyages.— More than a century ago the United States was engaged in a controversy with Great Britain over the question whether carrying a cargo from a belligerent port to a port of the United States (then a neutral) and thence to another belligerent port was a "continuous voyage" which would justify the capture of an American carrier. The United States stood for the principle that "free ships make free goods"; and insisted that if the cargo was actually unloaded and reloaded in the American port it was the object of two voyages, both of which were presumably innocent.

In the Civil War a similar question came up and the United States now took the ground that a cargo carried from Europe to a European colony and thence shipped, either in the same vessel or in another bottom, to a port of the Southern Confederacy, was engaged in an unneutral voyage and was subject to capture. The courts of the United States upheld such captures in the test cases of the *Dolphin and Pearl*, the *Stephen Hart*, the *Volant*, the *Springbok*, the *Peterhoff* and others. The Supreme Court of the United States confirmed the principle of these captures.

Most of these decisions justified the captures on two grounds: the nature of the cargo if contraband, and the ultimate destination whether the cargo was contraband or innocent, if on the way to a blockaded port. All the captures of vessels not actually proceeding to or from a blockaded port which were approved finally by the Supreme Court, were for transfers in which both legs of the travel were on the sea, and the ultimate destination was an enemy belligerent (Confederate) port. In the *Volant* and *Peterhoff* cases the destination was Matamoros, Mexico, whence the goods were to be carried over land to the Confederacy. In both these cases only the capture of the absolute contraband part of the cargo was justified; the ship and remainder of the cargo were released.

A very different system was inaugurated by Great Britain by a succession of Orders in Council and diplomatic notes beginning 1 March 1915. It was put forth first as "an embargo" and at no time was there a formal proclamation of a "blockade" although Sir Edward Grey (13 March 1915) asserted that "the British fleet has instituted a blockade effectively controlling by cruiser 'cordon' all passage to and from Germany by sea." This process, however, could not properly be called a blockade because it included restrictions on the entry of vessels into Scandinavian and Dutch ports, which being neutral could not possibly be subject to technical blockade. Furthermore, the policy included the assignment of a passage around the north of the British Islands to all vessels bound to Northern Europe and the stoppage and detention for examination of all commerce.

The real purpose of this policy was to shut off all neutral cargoes which in the judgment of the British government might be transported into Germany or might set free other commodities from the neutral countries which could then be carried into Germany. The United States replied (30 March 1915) declaring that "the Order in Council would constitute a practical assertion of unlimited belligerent rights over neutral commerce within the whole European area and an almost unqualified denial of the sovereign rights of the nations now at peace." Nevertheless, this remonstrance was not pushed home upon England, even when a list was drawn up by the American government, showing that from 50 to 55 American vessels had been compelled to interrupt their voyage at the British observation port of Kirkwall in the Orkney Islands. The controversy with Germany over the *Lusitania* turned public attention in another direction; and the United States practically submitted to the British interpretation of international law.

The policy of embargo, for it was not entitled to be called or applied as blockade, was vigorously followed. The British government refused to allow American vessels to coal unless

they would enter arrangement as to the nature of their cargo. It unloaded cargoes at its will and contented itself with paying the owners for them. It refused to permit shipments to neutrals unless they would enter into agreements against re-exportation. As a military measure the English policy was completely successful. It cut off practically all neutral trade from overseas to Germany and Austria, not only in munitions and in food, but in all commodities from the outside world, and thus prepared the way for the eventual defeat of the German nation and army. When the United States entered the war in April 1917 it forbore to press questions of injury or damages against its associates.

Breaches of Neutrality by the Belligerents.—At the beginning of the war, the British and French made little effort to influence public sentiment in the United States, and carefully refrained from raising international questions by using the United States Coast as a base; but when complaint was made that provisions were being sent from the port of New York to Allied cruisers at sea, the practice was at once stopped. On the other hand the Germans and Austrians from the very beginning united in systematic attempts to create public sentiment in their favor, and thence proceeded to engage in acts hostile, not only to their public enemies, but to the people and government of the United States. Before the war broke out a group of «spellbinders» was sent over under the command of Dr. Heinrich Albert, a German official. He engaged in secret propaganda, many of the details of which were later discovered and spent about $35,000,000 in hiring agitators, furnishing material for the press, buying newspapers, and so far as he could, organizing the German-Americans.

Albert and his agents were in constant communication with the diplomatic and consular officials of the Central Powers; but they were careful not to give any evidence of connection with the official propaganda for breaking up the munitions trade and setting on foot military and semi-military enterprises. They worked through a German University League, a Krieger Verein, a German-American Alliance, and other societies. In some States they attempted to set up a German-American party and to defeat candidates not favorable to the Germans, and they did their best to marshal the German voters and aliens in the United States in a movement for urging Congress to put an embargo on the export of munitions.

An official cohort for propaganda and more active measures was managed primarily by Count von Bernstorff and Dr. Dumba, the Austrian ambassador and included also Captain von Papen and Captain Boy-Ed, military attachés. Many consuls-general and other consular officers were in constant touch with this organization. The first effort was to buy up the munitions factories or their products, and thus make them useless to the Allies. Next they attempted to send secret expeditions or aid to German cruisers at sea. They also made a systematic effort to get German and Austrian workmen out of the munitions factories and egged on some of them to destroy those factories. They planned several expeditions to destroy means of communication in Canada. They furnished aid and comfort to East Indians who were plotting on American soil against the British government in India. They subsidized secret factories of bombs intended to destroy ships leaving American ports. They ordered the sabotage of the German vessels in port, just as the United States entered the war.

The United States government made every effort to penetrate and break up these criminal conspiracies, and secured convictions in a considerable number of cases, especially the following: Captain Fritzen, a German reservist, for an attempt to blow up the Welland Canal; Carl A. Luederitz, German Consul at Baltimore, for aid in securing a fraudulent passport; Captain Kleist, a naturalized American citizen, and Carl Schmidt, chief engineer of the German ship *Friedrich der Grosse*, making bombs on board that ship for the purpose of destroying vessels. Major von der Goltz, a German spy, gave evidence of another attempt to blow up the Welland Canal. Werner Horn, who claimed to be a German officer, received money from von Papen which enabled him to blow up a bridge connecting Maine with New Brunswick on the Canadian Pacific road. Paul Koenig, an official of the Hamburg-American line, was convicted of swearing to false affidavits that he had seen cannon on board the *Lusitania*. Wolf von Igel was an active agent in corrupting the journalists and buying up agitators; his papers were seized, and the German Embassy claimed them as official documents but declined to identify any of the papers. Franz von Rintelen, who had been active in founding an anti-munition organization called Labor's National Peace Council, was convicted of illegal attempts to prevent the shipping of munitions.

The United States government demanded and secured the recall of Captain von Papen and Captain Boy-Ed because of illegal acts for which they could not be tried on account of their diplomatic immunity. Dumba, the Austrian Ambassador, was dismissed (8 Sept. 1915) for conniving to get a false passport for one of his spies, and also for attempting to organize a strike to break up the munition manufacture. In addition to these offenses, which were proved in open court, the German agents, official and unofficial, were engaged in a tissue of plots which were subsequently revealed through documents of Albert, von Papen and others which were unearthed by the Department of Justice.

The Crisis of 1917.—The various phases of American neutrality here discussed were interwoven with each other. The war zone, submarine warfare, extension of contraband, blockade, continuous voyages, and control of neutral vessels in British waters were all different phases of the determination of the two groups of belligerents to destroy each other's commerce without reference to the previous restrictions of international law. In that process the commercial rights of all neutrals were certain to be restricted, and both parties were willing to push captures and condemnations to the farthest point that neutral governments would permit.

The British, however, were heavy and solvent buyers of American products; they are not chargeable with the sacrifice of a single life of an American citizen (non-combatant) as against 320 destroyed by German submarines. In addition the British government paid for seized cargoes and in some cases for vessels or dam-

ages for detention, thus relieving the pressure of owners for action by the United States government. Even when from February 1916 to February 1917 the Germans restrained their submarines from sinking vessels without notice, they were sinking great quantities of Allied shipping. Occasionally, as in the *Sussex* case, they failed to give due warning. Their treatment of non-combatants, in Belgium, France, Poland, Serbia, Rumania, and their responsibility for the massacres of Armenians by the Turks created a rising animosity against them in the United States. The pressure was to some degree relieved by the efforts of the American government to facilitate peace, particularly the proposals of 8 Dec. 1916, formulated by President Wilson. This was followed (22 Jan. 1917) by President Wilson's address on "Peace without Victory." The Germans, however, had decided to return to submarine warfare in its most merciless form. On 31 Jan. 1917, the German government gave notice at Washington that any ships found in a "zone" which included the seas adjacent to Britain, France and Italy, "will be stopped with every available weapon, and without further notice." By an added presumption, lanes were described upon the Atlantic, over which one American steamer would be permitted to pass every week.

It has sometimes been charged that this renewal of warfare was a violation of a promise made by the Germans in 1915. Reference to the discussion on this point above will show that the pledge was conditioned on the withdrawal of the embargo by Great Britain, which was never secured. Renewal of extreme submarine warfare was not, therefore, a breach of faith, but it was a clear breach of humanity and a denial of the accrued rights of neutral commerce. The argument that it was a retaliation for illegal British behavior had no force as against the United States. Retaliation by one belligerent against another cannot be invoked to destroy a third and neutral power. The ground of the United States was that the freedom of the seas was not granted by or dependent upon the will of particular nations either in peace or war, and could not be denied upon any "law of necessity."

The revival of a form of warfare which to the American government, and most of the American people, seemed murderous, was destined to lead to war. A suggestion had been made earlier that the difficulty might be avoided by forbidding Americans to accept employment or take passage on a belligerent ship liable to destruction by a submarine. In February 1916 McLemore, a member of the House of Representatives from Texas, introduced a resolution to the effect that Americans ought not to travel on any armed merchant ship. This resolution was laid on the table by a vote of 276 to 142. When, in February 1917, the difficulty returned in a startling form, the President came forward with a plan for turning the tables by arming American merchantmen. A bill was proposed by the President (26 Feb. 1917) "to supply our merchant ships with defensive arms . . . and to employ any other measures or instrumentalities that may be necessary or adequate to protect our ships and people in their legitimate and peaceful pursuits on the sea." The bill was defeated by a filibuster in the Senate; but on 12 March the State Department gave notice that "The Government of the United States has determined to place upon all American merchant vessels sailing through barred areas an armed guard for the protection of the vessels and the lives of the persons on board."

This armed neutrality was powerless to stop the progress of the war, and in any case could only have resulted in a sea fight which would be the prelude to war. The German government made a frantic attempt (February 1917) to induce Ambassador Gerard to agree to a "protocol" for enlarging the guarantees of the treaty of 1828, which could operate only if there were war between the countries. On 3 Feb. 1917 the President informed Congress that he had broken off diplomatic relations and dismissed the German ambassador, a broad intimation to the Germans that the United States was not too pacific to accept its challenge.

The President's second inaugural address (5 March 1917) indirectly suggested war. The next step was to call Congress in extra session (9 March 1917). The Germans were already beginning to sink vessels on which Americans were passengers or members of the crew. On 2 April the President officially advised Congress to declare war; and on 6 April 1917 Congress passed a joint resolution to the effect that "the state of war between the United States and the Imperial German government which has thus been thrust upon the United States is hereby formally declared." The President thereupon issued a proclamation of war, and the long period of neutrality terminated. On 7 Dec. 1917, a formal act of war was passed against Austria-Hungary, but no such action was ever authorized against Bulgaria or Turkey, the Allies of the two Central Powers.

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20. NEUTRALS AND THE WORLD WAR. The nations of the modern world are bound together so closely by political, social, economic and intellectual ties that any great war is inevitably felt everywhere. To a lesser degree this has been the case in the past, and much of international law is concerned with the rights and duties of neutrals. The interests of neutrals and belligerents constantly conflict. Neutrals wish to maintain as nearly as possible their ordinary relations with both sides; belligerents wish to prevent their enemies from receiving help from outside. Hence the discussions over blockades, contraband, the "freedom of the seas" and violations of neutrality.

From the first day of the war each neutral nation faced the following problems: (1) that of keeping out of the war; (2) of avoiding unneutral acts by the government or its citizens; (3) of preventing any belligerent from violating its neutrality, and of securing satisfaction for unlawful acts; (4) of upholding its rights under international law of carrying on certain kinds of commerce with either belligerent; (5) of readjusting the whole economic life of ordinary times, meeting deficits, getting raw materials, providing for unemployment, etc.; (6) of keeping the people fed, clothed and warmed; (7) finally, of mediation, of helping to end the war, and in the meanwhile of mitigating its severity by relief measures.

In particular the neutrals have been affected by the use of mines on the high seas, the creation of war zones, the increasingly ruthless use of submarines by Germany, the lengthening lists of contraband, blacklists, interference with mails, use of neutral flags by belligerents, the forcing of concessions by the withholding of imports and compelling neutral ships to enter belligerent ports. The Allies through their command of the sea could control a large part of the imports and exports of the neutrals, particularly the Scandinavian countries and Holland. Germany through open land frontiers and across the Baltic had access to these northern neutral markets. Both belligerents tried to prevent supplies from reaching their enemies indirectly through neutrals, and demanded concessions or threatened reprisals whenever the other side seemed to be profiting.

The Netherlands.— At the outbreak of war Holland mobilized to defend the frontiers. The Dutch knew that German expansionists had long desired to control the mouth of the Rhine, the Dutch sea-coast and their colonies in the East Indies. For years Pan-German propagandists had been urging the Dutch to join a greater Germany. German capital had secured a tremendous economic hold in Holland. In court, army and business circles there were numerous Germans and German sympathizers. The nation as a whole, however, was firmly resolved to maintain its neutrality and independence. To join Germany meant the loss of the colonies to the Allies; to join the Allies meant to risk the fate of Belgium and Serbia. The spectacle of martyred Belgium made a deep impression on Holland, exciting sympathy, indignation and alarm. While many were pro-Ally, Dutch patience was sorely tried by British restrictions on trade, interference with mail and cables and use of coaling privileges to control the movements of Dutch shipping. German methods of search and seizure were also regarded as illegal. Protests were made to both sides on these matters, and also as to mines in the North Sea. Specific violations of Dutch territorial neutrality by warships, aircraft or troops were resisted, or apologies were secured. Early in the hostilities the government forbade all belligerent warships to enter Dutch waters. This was extended to cover armed merchantmen. Soldiers who crossed the border were interned.

The government refused to publish its specific reasons for keeping a considerable force mobilized. Obviously by conquering Holland, Germany would have gained additional submarine bases and valuable rail lines to northern France; on the other hand a neutral Holland protected the vital Rhine industrial districts. On several occasions the Dutch suspected that Germany was trying to force a quarrel. At times, as in March 1916, it was rumored that the Allies planned to attack Germany through Holland. The most serious controversies were those with the German government over its submarine policy. Losses from mines and submarines began in 1914 and became steadily worse. Particularly critical were the sinking of the *Katwyk* April 1915, the *Tubantia* and the *Palembang,* March 1916, and of six grain ships, February 1917. In some cases Germany apologized and offered damages, in others responsibility was disclaimed, or the sinkings justified. Finally Holland, with Germany's assent, took over German shipping in the East Indies to replace some of the lost tonnage. On 20 March 1918 all Dutch ships in American and Allied ports were taken over, after German threats had prevented an agreement as to chartering them. Holland was to be paid and any losses made good. The Dutch government protested, but the measure though unusual was legal. Germany protested Holland's final acquiescence as an unneutral act, and brought on a crisis by demanding the right to ship gravel and other supplies through Holland to Belgium. The previous autumn Britain had brought pressure on Holland to stop such shipments. Holland yielded to Germany only in part.

The heavy expenses of mobilization and relief work necessitated emergency loans and increased taxes. At first business was disorganized. Stock exchanges closed, and a limited moratorium was declared. Many industries, like the diamond-cutting of Amsterdam, were paralyzed. Later readjustments resulted in some war prosperity, but the profits were not

widely distributed. It was especially difficult to secure raw materials, food and fuel, to control re-exports to belligerents and to maintain trade relations with the Dutch East Indies. The government at different times took action to prevent the export of necessities, to fix prices and to ration the food supply. Poor crops (1915) and floods (1916) increased the food difficulties. Much discontent was caused by the government's failure to solve all these problems satisfactorily. The question of imports was largely solved by the formation in November 1914 of the Netherlands Overseas Trust, an organization of Dutch importers who were allowed by the Allies to receive goods on their guarantee that they would not be re-exported to Germany, or used to replace Dutch goods so exported. While some smuggling continued, the great flow of goods to Germany was checked. In spite of food shortage at home the Dutch managed to export some meat, fish and dairy products to both Germany and England in return for coal and other necessities.

Holland was naturally keenly interested in peace, and through Dutch intermediaries occasional informal attempts were made to initiate discussions. Pacifist groups, like the International Congress of Women (April 1915) convened in Holland to denounce the war and to demand peace. Holland did much to relieve suffering. Besides caring for her own poor and unemployed, and the families of her soldiers, Holland supported over a million Belgian refugees, though many of them returned home later. Through Holland there went great quantities of mail and food packages for prisoners, particularly English prisoners in Germany. English-German exchanges and repatriations took place largely through Holland.

Switzerland.— Of the Swiss population of nearly 3,800,000, about 2,600,000 speak German, 800,000 French and 300,000 Italian. While the Swiss were patriotically united in their determination to resist attacks from whatever quarter, their sympathies were divided roughly along the lines of language. Some German-speaking Swiss, however, were alienated by the invasion of Belgium and by the whole German conduct of the war.

Although the neutrality of Switzerland had been guaranteed, the Swiss citizen army was promptly mobilized, and the larger part of it kept on guard throughout the war, in spite of increasing protests from the radical labor leaders. Occasionally alarming rumors were current that one side or the other planned a flanking movement through Swiss territory; but if such a plan was ever seriously considered the prospect of determined resistance, the mountainous character of the country, the moral disadvantage of an unprovoked attack and the doubtful military value of the step prevented its being undertaken. On several occasions when Allied or German aviators flew over Swiss territory apologies were made. The government tried to maintain a strict neutrality, censoring press expressions that might cause trouble. In 1916 anti-German riots at Lausanne were suppressed and an apology tendered. In January 1916, much excitement was caused by the trial of two Swiss officers accused of betraying Swiss and Allied military information to the Central Powers, but they were acquitted.

The government early (1914) protested against Allied interference with Swiss imports, particularly grain. Protests were also made against the German submarine blockade, though at first it purported to allow shipments to Switzerland through a French port, Cette. Switzerland keenly felt the loss of the profitable tourist trade. Industry also suffered. Unemployment was for a time serious, calling for government action. Normally Switzerland imported chiefly foodstuffs, silk, coal and cotton, and exported manufactures of cotton and silk, watches and clocks, cheese and chocolate. The chief trade was with Germany. Much difficulty was encountered in securing these imports and in keeping industry going, neither group being willing to help Switzerland to help its enemies. In October 1915, the Swiss Surveillance Society was formed, corresponding to the Netherlands Overseas Trust, and in general agreements were concluded guaranteeing that manufactured goods should not be sold to the enemies of the country furnishing the coal, raw materials and machinery that produced them. In spite of an increased use of electricity produced by water power, and the use of low-grade Swiss peat, Switzerland had to depend on Germany for coal, and in September 1916 obtained a supply in return for cattle, cheese and aluminum. In May 1918 Switzerland offered timber to the Allies in return for food concessions. Soon afterward cattle were again exchanged with Germany for coal. France objected. The food question became increasingly serious. At the outset the government forbade food exports, and later there developed constant negotiation for supplies from outside, regulating prices and controlling distribution. By 1917 the Swiss were on compulsory rations. The Swiss were almost entirely dependent on the United States for grain, which was allotted to them and sent through in spite of submarines which sank it when possible, even in Spanish ships.

As a neutral adjacent to both groups of belligerents Switzerland offered opportunities for espionage and intrigue, and also for informal peace negotiations. Swiss charitable and relief efforts were most remarkable. Doctors and nurses served in the Red Cross on both sides. Belgian and Serbian refugees were cared for. Exchanges of seriously wounded prisoners were arranged for (1915) and carried out. Swiss societies located missing prisoners and reunited scattered refugee families. The Post Office forwarded great quantities of mail and food packages for prisoners. Through Swiss intermediaries went money for relief in Turkey. Invalid prisoners, especially those suffering from tuberculosis, were certified by Swiss doctors and interned in Swiss sanitoria. Through Switzerland civilians and occupants of invaded territories were repatriated.

Denmark.— In Denmark the memory of Prussia's seizure of Schleswig-Holstein and the fear of German conquest made most of the people suspicious of and unfriendly to the Central Powers. Long continued Pan-German propaganda, however, had made some impression. In spite of the hopelessness of single-handed resistance, Denmark mobilized part of

the army, and strengthened the frontier defenses. A few violations of Danish neutrality were apologized for, the most flagrant being the destruction by Germany of the stranded British submarine E13 in 1916. Danish shipping early began to suffer from mines and submarines. Early sales of food and supplies to the belligerents soon brought a shortage. The government began regulating prices, rationing scarce articles, and arranging for necessary imports, especially coal, fodder, fertilizer, copper, oils, fats, hides and steel. Two Danish Merchant Guilds were formed which the Allies allowed to receive imports on a guarantee against re-export to Germany. In 1918 a similar agreement was made with the United States. From England and Germany combined only about two-thirds of the normal coal supply could be obtained, crippling railways, factories and lighting. Some electric power was later obtained from Sweden. Many, however, were thrown out of employment. In 1915 Denmark agreed with Great Britain to dispose of meat in the pre-war ratio, half to Great Britain, 14 per cent to Germany, the rest for home use. Export butter was divided evenly; England received five-eighths of the fish and Germany three-eighths. Under government supervision a considerable number of swine have been slaughtered because of the scarcity of fodder. On the whole Denmark fared much better as to food supply than most other European nations. During the war (1915) a more democratic constitution was adopted, granting woman suffrage. In 1916 the Danish West Indies were sold to the United States. Added expenses called for extra taxes and loans. In 1917 Denmark agreed to care for 1,200 invalid prisoners (Russian, German, Austrian).

Norway.— Through common liberal institutions, economic ties and intermarriage of the royal families, Norway has been bound to England. Though sometimes the Allied blockade aroused resentment, the chief anger of the nation — at times bringing it to the verge of war — was directed against Germany because of the losses of shipping and life caused by submarines. Some of the earlier losses were apologized and paid for. By June 1915 34 vessels had been sunk. In March 1917 66 ships were lost, 75 in April and 49 in May. By the summer of 1918, 769 ships had been sunk, with a loss of 1,008 lives, and 53 were missing with 704 on board, two-thirds of them probably "spurlos versenkt" by Germany. In 1916 all submarines were forbidden to enter Norwegian waters. The carrying power of the large Norwegian merchant marine proved directly and indirectly of great service to the Allies. Shipbuilding was greatly stimulated, and shipping stocks earned large profits. By 1916 Norwegian merchants were signing contracts against re-exporting articles allowed to pass by the Allies. In 1917 England cut off Norway's supply of coal, because of the export of pyrites to Germany, and only furnished it again on condition that Norwegian ships should make trips to France as well as to Norway. Efforts were made to develop Norwegian water power and coal. In 1916 the British government contracted for 85 per cent of the Norwegian fish catch. In 1918 the contract was taken over by the Norwegian government.

With less than 4 per cent of its area under cultivation Norway has always imported a large part of the necessary cereals. Since 1914, by the use of tractors, the home production has been considerably increased. Government control of food, and ultimately strict rationing, were found necessary. Whale oil was refined and used to make oleomargarine. In May 1918 a treaty with the United States allowed Norway to import, for home consumption only, foodstuffs, coal and farming machinery. In return timber, wood-pulp, fish, metals for munitions and nitrates were to go to France. While the bulk of Norwegian exports went to the Allies, some were permitted to go to Germany. Norway feared German resentment, and as a matter of fact the German Central Trade Board attempted to retaliate for the American agreement. Internally, Norway has seen further liberalization of the constitution. In 1916 there were serious labor disturbances.

Sweden.— Of the Scandinavian countries, Sweden has shown the strongest pro-German sentiment. Long and close cultural and economic associations made most members of the court (the queen is German), of army and business circles, of the universities and of the Conservative party generally, sympathetic to the Central Powers. For years the fear of a Russian advance across Sweden and Norway to warm water, and apprehension of Russian aggression in the Baltic, had made Sweden look to Germany for protection. This feeling was carefully stimulated from Germany. In the war, however, Sweden decided for neutrality, mobilized part of the army and made common cause with Norway and Denmark in defending their neutrality and their rights. A small but aggressive "activist" party advocated intervention on the side of the seemingly victorious Central Powers, with the hope of securing the Aaland Islands and Finland from Russia. The Socialists and Liberals were strongly for peace. Most of the people, even the Conservatives, whatever their sympathies, favored neutrality, if possible. In January 1915 export of munitions was forbidden. In 1916 submarines were forbidden to enter Swedish waters. Apologies were secured for several violations of neutrality, as in 1915, when Russian ships destroyed a German warship inside the three-mile limit, and in 1916 when a German cruiser fired on a Swedish submarine. In July 1916 Sweden closed the exit from the Baltic through Swedish waters, but reopened it after a strong English protest. Perhaps by way of compensation, 10,000 horses were sold to Germany. The action of Swedish diplomats in transmitting German correspondence, notably the Luxburg dispatches from Argentina, aroused much unfavorable comment, and was not approved by Swedish opinion. Swedish-Russian relations improved somewhat in the course of the war. Trade was brisk. Railroad connections, long delayed for strategic reasons, were made. Through Sweden thousands of German and Russian invalided prisoners were exchanged, and much relief work was done. A crisis was caused (1916) when Russia fortified the Aaland Islands, but it passed when Russia and England guaranteed that the fortifications would be removed after the war. The collapse of Russia removed the fear of that power. Sweden was

particularly interested in Finland, where an important minority is Swedish. Beyond assisting refugees to escape, however, the Swedish government did not intervene. To preserve order, the Aaland Islands were occupied 19 Feb. 1918, and the action of Germany in displacing the Swedish forces 3 March increased the dislike and fear of Germany which had been growing since the submarine campaign grew more ruthless. To have the Baltic made a German lake, as for a time seemed inevitable, would have seriously threatened Swedish security.

Sweden also objected to British interference with imports and the mails, and by stopping mail for Russia (1915) became involved in a serious controversy. An arrangement was finally made reserving Sweden's right to claim damages later. Until 1916 Sweden refused to permit merchants to make the usual contracts with the Allies as to re-exports, and finally agreed only on condition that the Swedish government should supervise the working of the scheme in Sweden. In 1915 a limited amount of cotton and coal was allowed to pass by England. England and Germany both wanted Swedish iron ore. By treaty Sweden was bound to furnish a certain amount to Germany, and the government refused to stop this export. England however took an increasing share of the output. To England Sweden exported timber for mine-props, in spite of the fact that Germany declared this contraband and seized it whenever possible.

The food shortage was serious. Ordinarily over 12,000,000 bushels of cereals were imported, chiefly from Russia and Germany. Now four-fifths of this had to come from the United States, the rest from Argentina. Prices rose enormously. The government took control, forbidding exports, arranging for imports, selling food to the public at less than market prices, attempting to fix prices, requisitioning stores, rationing various articles, and finally adopting bread and sugar cards. The rye crop of 1916 was poor, partly because of lack of fertilizer. Fodder was scarce, dairy products fell off and many cattle had to be killed. A little food (butter and pork) was exchanged with Germany for coal. When England cut off the supply of oleomargarine, butter had to be kept for home use. At home increased use of wood and development of water power helped the fuel shortage. Some coal was produced by the Spitzbergen mines. Coal imports for the first six months of 1916 were 2,859,750 tons; in the same period in 1917 they fell to 634,138 tons. In 1916–17 England cut off the supply of tanbark, thus crippling factories which had been making army shoes for the Central Powers. While many individuals made money out of war trade, and while bank deposits, imports and exports all showed an increase, the country as a whole suffered in many ways more than England. Part of the war profits were used to buy out foreign owners of Swedish securities.

Some Swedish Socialists were active in trying to bring the working classes of all the belligerents together, particularly after the Russian Revolution. Stockholm was proposed as a place for the meeting, but Allied opposition prevented it. An internal controversy, which had begun before the war, raged around the question of national preparedness and over the degree to which the king might act independently of the Ministry. Taxes and loans were needed to meet deficits. The elections of September 1917 gave a strong Socialist-Liberal majority and led to somewhat better relations with the Allies. In May 1918 by a trade agreement with the Allies and the United States, Sweden allowed 400,000 tons of shipping to be chartered to the Allies, and promised to facilitate the export of wood-pulp, steel and iron ore. In return imports of food, leather, oil, cotton, etc., principally from Argentina and Australia, were permitted. Re-export of course was forbidden.

The war strengthened the ties between the Scandinavian countries. At several conferences of the three kings and their advisers questions of common interest were discussed, and programs of action decided upon. On several occasions identical notes were issued by the three governments (protesting against blockades and submarines, agreeing to Wilson's peace-terms note), thus emphasizing Scandinavian solidarity. By interchange of products (e.g., Swedish sugar to Norway, Danish butter to Sweden) the economic distress was somewhat relieved.

Spain.— Spain was more fortunate than the northern neutrals in being farther removed from actual fighting. Nevertheless there was some danger of being drawn into the war, particularly through the German submarine campaign. Spain had interests and sympathies with both groups. A common Latin culture and an interest in Mediterranean questions binds her to France and Italy. Colonial interests in North Africa make it imperative to keep on good terms with the Entente naval powers. (The queen is English). A larger proportion of Spanish trade has been with the United Kingdom and France than with any other country. On the outbreak of war, Spain took over French interests in Germany and Austria-Hungary. In 1916 Spain gave assurance to France as to the Pyrenees boundary and Morocco, and withdrew some garrisons from the boundary of Portugal, then fighting as England's ally. On the other hand, trade relations with Germany had been getting closer. More German capital was being invested in Spanish enterprises. During the war it was thought that Germany was planning to make Spain a base from which to recover lost trade after the war. Thousands of Germans in Spain, directed from the embassy, carried on an energetic propaganda with considerable success. England's hold on Gibraltar and the French advance in Morocco were emphasized. German victory was spoken of as certain. A number of newspapers were suspected of receiving German money.

The mass of the people were strongly in favor of neutrality. The war affected them chiefly through higher prices, unemployment and scarcity of food, against which they expressed resentment by occasional riots and strikes. Though the sympathies of the better educated classes were strong on one side or the other, relatively few advocated joining in the war. The Liberals, Republicans and Socialists, through their sympathies with radical and anti-clerical France, were pro-ally, as were part of the professional classes. Partly through dislike of French anti-clericalism, the Church leaders, the

Clericals and the Conservatives, together with most of the army officers, were pro-German. Some Catholics however protested against the outrages in Belgium. The king personally appeared to favor the Allies, but he maintained a correctly neutral official attitude. He individually established a bureau to locate missing persons in the war area. The government tried to be neutral and curbed violent outbreaks of sympathy for either side. It was repeatedly charged that German submarines were getting supplies at unfrequented places along the coast, which it was hard to guard properly. Several damaged submarines were interned in Spain, but one or two later escaped, apparently through the connivance of local officials. The Allied restrictions seemed to the Spanish irksome and illegal, but still greater resentment was aroused by the German submarine campaign, particularly after February 1917. By August 1918, one-fifth of the Spanish tonnage had been sunk, much of it outside the area covered by German decrees, some of it even in Spanish waters, with considerable loss of life. The Cabinet finally announced that future losses would be made good temporarily by using equivalent German tonnage interned in Spanish ports. Germany would not agree to this. In October 1918 preliminary steps were taken for carrying out the Spanish plan, but hostilities ended before much was done. During the war there were a number of Cabinet changes, due largely to differences over internal questions. In foreign affairs, Liberal and Conservative and coalition governments alike held to a policy of neutrality, though Romanones rather favored intervention on the side of the Allies. The government was forced to resort to extra taxes and to loans, the latter being floated with difficulty. In 1916 Spain refused to join President Wilson in suggesting to the belligerents that they state their war aims, suggesting however the formation of an entente among neutrals to uphold their rights.

Internal problems had to do with the development of a more genuinely democratic government, administrative decentralization, the inauguration of a program of social and economic reform, the development of Spanish resources, the strengthening and reform of the army and the control of the committees of army officers, and the formulation of a more satisfactory Moroccan policy. These difficulties were of course intensified by war conditions. Internal economic problems caused much anxiety. At times embargoes on foodstuffs and raw materials were laid, and then relaxed. Scarcity of coal crippled factories and railroads. In March 1918 coal was selling at $45 a ton. The food shortage, though at times serious, was less so than in most other European countries. Part of the difficulty was caused by extensive exports of foodstuffs, including grain, sugar and wine, amounting in 1916 to $106,000,000 and in 1917 to $101,000,000. Imports of food were from one-third to one-half of these amounts. Part of the food scarcity at home was attributed to food speculation. Some Spanish manufacturers were helped by the increased demands from the belligerents, particularly France and England. After falling off in 1914, imports and particularly exports rose considerably above the figures for 1913. Large orders for the American army (mules, blankets, food) were placed in Spain. When there were delays in delivery — possibly not unconnected with German activities — the United States brought pressure to bear by holding up the export of much-needed raw materials. In March 1918 an agreement was reached by which Spain was to send supplies to Pershing, and was to give France a credit for supplies, receiving in return permission to import oil and cotton from the United States.

South America.— The economic effects of the war were immediately felt in South America. As a continent, South America exports foodstuffs and raw materials, and imports coal, oil, foodstuffs and manufactured goods from Europe and the United States. South American countries are largely in debt and continue to rely on outside capital for further economic development of their resources. For some months the interruption of normal trade and the disarrangement of international credit caused depression and distress. Nearly everywhere a moratorium was declared. Customs revenues fell off, and retrenchment, new taxes and additional loans were needed to meet governmental deficits. In Chile the export of nitrates was crippled, and with it the finances of the government. In Brazil, already suffering from a fall in price of rubber and coffee, disorders broke out among unemployed rubber collectors. By 1915 conditions began to improve somewhat. A determined effort was made by the United States and Great Britain to capture the large trade formerly done by the Central Powers. The increasing demands of the Allies for food, sugar, hides, copper, tin, rubber and nitrates caused a revival of exporting. By 1916 the Chile nitrate industry was more prosperous than ever. The Argentine had a market for all the grain for which transportation could be secured. The chief difficulty was with shipping, owing to the increased losses by submarines and the diversion of ships to more pressing uses. Freight rates rose very high. South American imports fell from $1,033,000,000 in 1913 to $536,000,000 in 1915, rising to $646,000,000 in 1916. Before the war between 13 per cent and 16 per cent of these imports came from the United States. In 1916 the percentage rose to 36, and later to nearly 50. South American exports fell from nearly $1,160,000,000 in 1913, to $889,840,000 in 1914, rising to $1,233,000,000 in 1916.

Some questions of South American neutrality were raised. German cruisers in the early days attempted — sometimes with success — to obtain supplies and wireless information from South America. Britain protested. Chile, Ecuador and Colombia denied any unneutral activities. The German cruiser *Dresden* was sunk (14 March 1915) by the British in Chilean waters. England explained and apologized.

South American shipping was not large, but it suffered its share of losses. The German submarine campaign of 1917 led to protests from most of the South American republics, a number of which followed the United States in breaking relations with Germany (Brazil, Peru, Ecuador, Bolivar, Paraguay, Uruguay). The action of Brazil, the Argentine and Chile was watched with particular interest. In both the Argentine and Brazil there were hundreds

of thousands of German settlers among whom an active Pan-German propaganda had long been carried on. Germany's hope of extending political control over parts of these two states was well known. There were also hundreds of thousands of Italian settlers, many of whom — perhaps 50,000 — had been called back to fight in 1915. Their loss, and the stoppage of immigration, increased the labor shortage. In Chile the German trained army was said to be Teutonic in sympathy, but public opinion was divided. After breaking relations with Germany, 11 April 1917, Brazil a few weeks later "revoked her neutrality" in order to show Pan-American solidarity, and seized German shipping. On 26 October, following the sinking of the *Macau*, Brazil declared war. The Brazilian navy assisted in hunting for raiders and submarines. The Germans in southern Brazil made some trouble, but it did not prove serious. In the course of the negotiations between Argentina and Germany as to the safety of Argentine shipping, the German Ambassador, Count Luxburg, advised his government that two small ships then at sea should either be spared or "sunk without leaving any trace." The publication of this dispatch by the United States led Argentina to dismiss Luxburg. In September Congress voted to break relations with Germany, but on the repudiation of Luxburg by Berlin, President Irogoyen refused to take further action. A reference in another of the count's dispatches to "reorganizing" southern Brazil aroused anger in that country. By the end of the war South America had not recovered entirely from the initial depression. On the whole, however, the governments came through financially in better shape than might have been expected. Home manufacturing and the use of home resources were stimulated. The need of greater diversity of home products was realized. Germany's commercial hold was for the time broken, and the menace of political aggression ended. Pan-American co-operation and solidarity were increased, and closer political and economic ties with the United States established.

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21. THE WAR AND THE SMALL NATIONS OF CENTRAL AND EASTERN EUROPE.

I. INTRODUCTORY.

One of the most important results of the World War is the political emergence and independence of several small national states which had previously been suppressed and denied a separate political existence or the full realization of their national aspirations. These new or greatly augumented national states include the Finnish peoples of Finland, Esthonia and northern Livonia; the Letts and Lithuanians of the Baltic provinces of southern Livonia, Courland and their hinterland; the Poles of Russia, Prussia and Austria; the Ruthenians of the Ukraine; the Czecho-Slovaks of Bohemia and Moravia; the Magyars of Hungary; the Rumanians of Transylvania, Moldavia and Wallachia; the Bulgars of the southeastern Balkan regions; the Jugo or southern Slavs, including the Slovenes, Croats and Serbs; the Albanians on the coast of the lower eastern Adriatic; and the Greeks in the extreme south of the Balkan districts and about the islands and shores of the Ægean Sea. It must be understood at the outset, of course, that the above-mentioned peoples were not all equally suppressed during the period before the war. Some had enjoyed at least partial political emancipation, while others remained entirely submerged in a political sense. But as a group they do constitute the "small nations" that figure prominently in current international problems. The general historical and psychological background of the emergence of the national aspirations of these peoples is discussed in the article on NATIONALISM, THE HISTORICAL DEVELOPMENT, in this Encyclopedia.

II. THE HISTORICAL AND ETHNOGRAPHIC BACKGROUND OF THE PROBLEMS OF THE SMALL NATIONS IN THE WORLD WAR AND AT THE PEACE CONFERENCE.

1. The Finnish Peoples.— The northernmost of these suppressed nations are the Finnish peoples of Finland, Esthonia and northern Livonia. Originally constituting a portion of that early Nordic stock which inhabited most of the great plain of Russia, and from which the Teutonic and Scandinavian peoples, as well as the Finns, Letts and Lithuanians, have subsequently been differentiated, they have been forced north against the Lapps by the successive invasions of the Russian Slavs from the south They were converted to Christianity by Bishop Henry, an English missionary, in the middle of the 12th century. In the 14th century Finland was annexed to Sweden and about 1350 Denmark, which had controlled Esthonia, surrendered it to the Teutonic Knights. At the beginning of the 17th century, the vigorous Swedish monarch, Gustavus Adolphus, obtained for Sweden both Esthonia and Livonia. While the Swedes were able to control the Finns politically for a considerable period, they were never able to impose their culture upon their Finnish subjects beyond inducing them to accept Swedish Protestantism. In 1721, by the Treaty of Nystad, Peter the Great obtained for Russia Esthonia, Livonia and part of Finland, and by 1809 Russia had secured complete political control of all the Finnish peoples. For some 90 years thereafter the Finns enjoyed practical cultural autonomy, but in 1899 the advocates of the Russification policy of Pan-Slavism induced Nicholas II to extend these measures to Finland. The Finns, however, took advantage of the weakness of the tsar in the revolution of 1905 and compelled him to restore the Finnish constitution and to consent to the many liberal political reforms proposed by the Finns. A revival of Russification policy by the Russian bureaucracy in 1913–14 was partially terminated by the outbreak of the World War, but was probably instrumental in inducing the Finns to declare their independence from Russia in December 1915. From the racial standpoint Ripley, the leading authority on the racial distribution of Europe, holds that the Finns are a branch of that primordial Nordic stock which inhabited the region now known as Russia and from which have been differentiated the Teutonic, Letto-Lithuanian and Finnish types. The Nordics were pressed north by the invasions of the Alpine Slavs from the southwest. The Finns, having been massed against the extremely

broadheaded Lapps in the north and intermarried with them, have acquired a tendency toward broadheadedness which was quite unknown in the original stock and is practically absent among the Finns of the Baltic provinces of Esthonia and Livonia who have not been brought into proximity with the Lapps. In recent times three languages have been used in Finland, the Swedish in commercial and international relations, and to a considerable degree in culture and religion; the Russian as the official speech, and the Finnish as the national language. The Finns number about 3,500,000, of whom about 2,500,000 live in Finland. In 1910 an authoritative estimate put the proportion of Finnish-speaking peoples at 88 per cent and at least that proportion are of a definite Finnish stock. In religion the Finns are overwhelmingly Lutheran. The strength of the national bond between the Finns of Finland and their kinsmen in the Baltic provinces can only be determined when the confusion and conflicting claims growing out of the present war have subsided.

2. The Letts and Lithuanians.— Living next to the Finns of Esthonia are the Letts and the Lithuanians who inhabit the Baltic provinces of southern Livonia and Courland and their hinterland. The Letts dwell in the Baltic Coast region and the Lithuanians in the adjacent inland districts. While the Letts and Lithuanians are physically identical and linguistically and culturally closely allied, their history has been at least slightly different. That this variation began only after they had been pushed up toward the Baltic by the oncoming Slavs cannot be doubted. The conquest and colonization of the Letts by the Teutonic Knights was begun in the 13th and 14th centuries. The Letts followed the order into an acceptance of Lutheranism, but after the order was dissolved in 1526 the Letts were later partitioned between Poland and Sweden. It was not long, however, until the Letts were united with the Lithuanians in a common subjection to Russia. By the Treaty of Nystad, in 1721, Livonia was ceded by Sweden to Russia, and Courland was obtained by the third partition of Poland. Lithuania has had a much more distinguished history. At the opening of the 14th century it was a great non-Christian duchy stretching from the Baltic provinces on the north to the Black Sea on the south. In 1386 its grand duke, Jagello, married Jadwiga, daughter of the king of Poland, accepted Roman Catholicism for himself and his subjects and became king of Poland as Wladyslaw II. This purely personal union was changed into a constitutional one by the Union of Lublin in 1569. The merger with Poland was never popular, however, with the Lithuanians, and in accordance with the principle of national self-determination this historical union could in no way be used as a basis for a claim to Lithuania on the part of the restored Polish state. Lithuania constituted the majority of that part of Poland which went to Russia in the partitions from 1772 to 1795. Until 1876 it was allowed a large amount of cultural autonomy, but after that date the Russification policy was pursued with the usual result of only increasing the national sentiment of the Lithuanians. Racially the Letts and Lithuanians are identical, both being branches of the same primordial Nordic race from which the Teutons and Finns were also differentiated. The Lithuanian language is one of the most interesting in Europe, being the best preserved representative of the so-called "Aryan" type. It is said that the intelligent Lithuanian peasant has little difficulty in reading Sanskrit. The Lettish language differs but slightly from the Lithuanian. Religion is the chief point of division between the Letts and Lithuanians. While some Letts belong to the Greek Church and some Lithuanians are Protestants, the vast majority of the Letts are ardent Lutherans and the Lithuanians are overwhelmingly Roman Catholic. Their Roman Catholicism is the only thing which the Lithuanians have in common with the Poles. It is generally estimated that there are something over 2,500,000 Lithuanians and 1,250,000 Letts, though in the official Russian censuses they are all lumped together as Lithuanians.

3. The Poles.— Of all the nations freed by the war Poland can, perhaps, claim the most notable and romantic past. Aside from non-Polish elements, it once included Russian Poland, Posen, East and West Prussia, Silesia and Galicia. Little is known of the origins of the Poles—a Slavic people—before the foundation of the vast Polish kingdom embracing most of central Europe by Boleslaw the Brave (992-1025). This abortive domain was divided in 1139 and not reunited until 1320. In the middle of the 13th century the Teutonic Knights began their missionary work and colonization among the Poles and succeeded in converting them to Roman Catholicism. The military success of the Knights was not as marked as their theological progress; 24 years after the personal union with Lithuania under Jagello, the Poles and Lithuanians utterly defeated the Knights in the battle of Tannenberg. In 1683 John Sobieski, king of Poland, relieved Vienna and saved central Europe from the Mohammedans. The complete union with Lithuania at Lublin, in 1569, gave Poland assurance of an ample territory, but the state was so beset with fatal weaknesses that decline was inevitable and ultimate extinction invited. The kingdom was extensive but lacked distinct or defensible boundaries; there were serious religious and racial diversities; gross political, social and economic inequalities existed; the constitutional arrangements invited anarchy; and the control by foreign kings resulted in the exploitation of Polish interests. The first partition between Prussia, Austria and Russia in 1772, while unjustified on the part of the partitioning powers, can stir little sympathy, but not so with the second and third partitions in 1793 and 1795. In the 21 years that had intervened the Poles had eliminated many of the fatal economic and political weaknesses that had previously endangered their national existence and had given promising evidence of being on the eve of a far-reaching political renaissance, but the avaricious empress, Catherine II, would tolerate no strong Slavic state obstructing Russian contact with the west and she arranged the outrageous partitions of 1793 and 1795 which terminated the political independence of Poland. The national hopes of the Poles were temporarily revived by Napoleon's creation of the grand duchy of Warsaw, in 1807. Still more promising was the establishment, in November of 1815, of a kingdom of Poland by the then liberal tsar, Alexander I. This embraced much of the old kingdom of

Poland and was favored with the most liberal political constitution then in existence in Europe, but the Poles desired complete political independence and could not resist the contagion of the revolutionary movement that swept over Europe in 1830. Their revolt was speedily suppressed and the short-lived kingdom was united with Russia. Encouraged by the growth of nationalism in Germany and Italy and by the benevolent but treacherous attitude of Napoleon III, the Poles made one last desperate attempt in 1863 to obtain their freedom. This rebellion was crushed with even greater ease than the revolt of 33 years earlier and a most brutal and thorough-going punishment was meted out to the gallant rebels. That policy of Russification then began, by means of which the Russians have since tried without avail to crush the national aspirations of their Polish subjects. The one extenuating compensation which the Poles have enjoyed since 1863 has been the fact that the coming of the industrial revolution to Russia made Poland the centre of Russian economic life. That part of the Polish nation which was included within the kingdom of Prussia — a part of upper Silesia, Posen, West Prussia and the Masurian district of East Prussia — has met with oppression only less severe than that which their kinsmen received from Russia. But the rigorous religious, educational and agrarian policy of Bismarck and Bülow only served to stir the resentment of the Poles and to reanimate their national spirit. Only in Austrian Galicia were the Poles accorded that degree of autonomy and liberal treatment which has made them partially satisfied to dwell in political subjection to another state. The Poles are a branch of the Slavic division of the Alpine race, but are much less broadheaded than their Czech and Slovak neighbors on the south, or even the Russians to the east. Their contact with so many different peoples has caused a considerable prevalence of racial intermixture Their language is a distinct western Slavic dialect. In religion over three-fourths of the Poles are Roman Catholic. The only notable exception is to be found in the 300,000 Protestants in the Masurian Lakes district of East Prussia. The estimates of the number of Poles in Europe at the outbreak of the war vary from about 15,000,000 to 20,000,000, of whom some 3,500,000 lived in Germany, about the same number in Austria and the remainder in Russia.

4. The Ruthenians.—Stretching from southeastern Poland to the sea of Azov is the district of the Ukraine, eastern Galicia, and part of Bukowina, the home of the Little Russians or Ruthenians. Roughly this is the region included between the Dniester and Dnieper rivers and coincides with the fertile «black-earth» district of Russia, the most productive cereal growing region in Europe. The Little Russians or Ruthenians of the Ukraine have had a most varied history. Settling in southern Russia in one of the most recent waves of Slav immigration, they were first welded into something like a southern Russian state, with Kiev as their capital by Yaroslaff in the first half of the 11th century. An attempt was made to introduce at least a veneer of Byzantine civilization. The kingdom lasted little more than a generation and the eastern part of the region was overrun by the Tatar invasion of the 13th century. In the 14th century the majority of the Ukraine was conquered by the expanding Lithuanian principality and was later included in the joint kingdom of Poland and Lithuania. In the middle of the 17th century an unsuccessful rebellion of the Ukraine led to the placing of the eastern portion under the suzerainty of Russia, but most of it remained with the Polish-Lithuanian kingdom until the partitions. Austria obtained the Ruthenians of eastern Galicia by the first partition in 1772, and Russia secured the remaining portion by the partitions of 1793 and 1795. Within the last 40 years there has developed a determined Ukrainian movement for independence from Russia which has been greatly stimulated by the same Russification policy that has been applied to the Finns, Letts, Lithuanians and Poles. The ruthless repression of Ruthenian national sentiment and activities by Russia in the early part of the war was probably responsible for the immediate growth of the independence movement in the Ukraine after the Russian Revolution of March 1917. Racially the Ruthenians are the purest of the Russian Slavs and the best Russian representatives of the Alpine race. They speak the truest of the Slavic dialects. Most of the inhabitants of the western Ukraine adhere to the curious Uniate Church. This was created in 1595 by the union of Brest-Litovsk, according to the terms of which the Ukrainians of the Polish-Lithuanian kingdom were made to accept the supremacy of the Roman pontiff, while at the same time they were allowed to retain their Greek orthodox liturgy, ritual, ceremonial and organization. Farther east the Ruthenians are divided between the Uniate and the Orthodox churches. Liberal estimates place the total number of Ruthenians at about 30,000,000, of whom some 3,500,000 reside in Galicia, 700,000 in the Carpathian district of Hungary and about 50,000 in Bukowina. The others are, of course, found in southern Russia.

5. The Czecho-Slovaks.—South and west of the home of the Poles and Ruthenians is found the land of the Czechs of Bohemia and Moravia and of the Slovaks of northwestern Hungary. Like the Poles, these peoples have had a distinguished past. Their Slavic ancestors came into this district during the 6th century and were organized into the first Bohemian state during the second quarter of the 7th century. Absorbed by the transitory Great Moravian empire in the 9th century, Bohemia regained its independence in the 10th after the Magyars had overthrown the Moravians and absorbed the Slovaks. In 1086 it became an independent kingdom and during most of the 14th century its dynasty headed the Holy Roman empire. The height of its prosperity was probably attained under Charles IV (1347–78). The Hussite wars of the 15th century were not only of a religious nature, but were also a great national movement. In 1526, to gain the strength of unity against the Turks, the Bohemians accepted the personal leadership of the house of Hapsburg. Almost exactly a century later, as a result of the first episode of the Thirty Years' War, Bohemia lost its independence and there began a period of ruthless Germanization and forcible conversion to Catholicism, which for nearly two centuries seemed to have crushed out the national life of the Czechs. In the first half of the 19th century, however, this was re-

kindled by the reaction of the nationalistic aspects of the Napoleonic period upon Bohemia and by the arousing of Czechish interest in their national culture and history by a number of brilliant scholars, among them the linguist and philologist, Dobrovsky; the philosopher, Kollar; the archæologist, Safarik, and, above all, the historian, Palacky. The national movement in the spring and early summer of 1848 was brought to a speedy and tragic end, but since 1868 the Czechs have maintained a steady campaign for the recognition of their national rights and aspirations by Vienna, the old Czech party demanding that Emperor Franz Joseph be formally crowned king of Bohemia at Prague, and the young Czech party looking forward to the more aggressive and ambitious program of uniting with the Slovaks, Ruthenians and Jugo-Slavs in the attempt to make the dual-monarchy a Slavic state. Racially the Czechs are, of course, Slavs, being much taller and more broadheaded than the Poles and, to a lesser degree, than the Ruthenians. In Bohemia and Moravia, however, there are large minorities of Germans which constitute about 36 per cent of the total population in Bohemia and 29 per cent in Moravia. Czechs and Slovaks use the Slavonic dialect of the Czechs as their national literary language. In religion the great majority of the Czechs are Roman Catholic, while the Slovaks are fairly evenly divided between Catholics and Protestants, but religion plays little part in the present national complex of the Czecho-Slovaks. In 1910 it was estimated that there were about 6,500,000 Czechs in Bohemia and Moravia and slightly more than 2,000,000 Slovaks in the Tatar districts of northwestern Hungary.

6. The Magyars.— Though the Magyars of Hungary and Transylvania are normally and quite correctly regarded as a dominating or governing nation, it is at the same time true that since 1526 they have been in varying degrees subject to the House of Hapsburg. The Hungarians, presumably an off-shoot of the Finns, came into the great plain of Hungary in the 9th century. They tried to push farther westward into Germany, but were decisively defeated by Otto the Great in 955. Receding into Hungary, the Magyars remained as a wedge separating the northern and southern Slavs of central Europe and were organized into a stable state by their first king, Saint Stephen (997–1038). In the 12th century they began their expansion southward through Croatia to the Adriatic. By 1200 they had been converted to Roman Catholicism and had very generally adopted European customs and institutions. In 1222 King Andreas II issued the famous Golden Bull which served as the constitution of Hungary until the revolution of 1848. In the 13th century Hungary was overrun by the great Mongol invasion from Asia; the Hungarian army was crushed in 1241 and the country devastated. Recovering from this disaster, the Hungarians met a similar fate at the hands of Suleiman the Magnificent, the leader of the Turks, some three centuries later at the battle of the Mohacs, 1526. The Turks occupied the most of Hungary and turned the remainder over to the Hapsburgs. After the tragedy of Mohacs the Hungarians never regained their complete independence until the end of the present World War. In 1699, by the terms of the Treaty of Karlowitz, that part of Hungary taken by the Turks was returned to Austria and until 1848 the Hungarians enjoyed a large degree of autonomy under the Hapsburg emperors who reigned as kings of Hungary. The promising revolution of 1848 failed primarily because the Magyars were unwilling to grant to the other nations of Hungary the same concessions from Budapest that the Magyars had succeeded in extorting from Vienna. After the creation of a temporarily independent Hungarian republic in the spring of 1849 the Magyars were overwhelmingly defeated by the Austrians and their Russian allies and were severely punished for their uprising. When the Hapsburgs were humbled by the double defeat of 1866, they found it necessary to placate the Hungarians by the arrangements of the Ausgleich of 1867, which created the dual-monarchy and raised Hungary nearly to a plane of equality with Austria. This important concession did not, however, give Hungary independence and it was most unjust to the non-Magyar majority in Hungary. The Ausgleich was framed to make possible the German-Magyar repression of the Slavs, and the rule of the Magyars over their subject Slavs and Rumanians in the attempt to Magyarize all of Hungary has been more brutal and severe than that of any other state except Russia. The exact nature of the racial derivation of the present Magyar population of Hungary is unknown. Ripley holds that they are the products of the intermixture of an original Slavic population with a Finnish minority which entered the plain of Hungary in the 9th century, conquered the Slavs and imposed their Finnish language and culture. He believes that in the mixture of the two races the Slavs were much the more numerous and that the modern Magyar is about one-eighth Finnish and seven-eighths Slav, a fact which accounts for the present broadheadedness of the Magyars. The Hungarian language is a Finnish dialect with considerable evidence of borrowing from the Turks. In religion the Magyars have since their conversion to Roman Catholicism been overwhelmingly adherents to this cult though there are a few Protestants. In 1910 there were about 10,000,000 Magyars in Hungary, a number which was over 40 per cent of the total population. This number includes some 800,000 Magyars in Transylvania, which is chiefly inhabited by Rumanians. The most important repressed races were something over 3,000,000 Rumanians, 2,000,000 Germans, about 5,000,000 Slovaks, Croats, Slovenes and Serbs, 1,000,000 Jews, and over 500,000 Ruthenians. The readjustment of central Europe according to the principle of nationality at the Paris Peace Conference leaves Hungary one of the "small nations" of the future.

7. The Rumanians.—To the east of the Magyars and occupying the northern half of the great plain of the lower Danube are the Rumanians of Moldavia, Wallachia, Transylvania, eastern Bukowina, and part of Bessarabia and the Banat of Temesvar. The product of a considerable mixture of races, these people were gathered under a political organization in the Danubian principalities of Moldavia and Wallachia after the retirement of the Mongols who invaded this district in the 13th century. Under the leadership of Stephen the Great of Moldavia (1457–1504) they had become a power-

ful military state and for a time fought off the Turks with success, but were later overcome by these Asiatic invaders. According to the terms of the Treaty of Kuchuk Kainarji (1774) between Russia and the Turks, the latter were ordered to improve their rule in this region and further progress was made by the Treaty of Adrianople in 1829 which secured for these two principalities practical autonomy from Turkey. In 1859 the inhabitants of Moldavia and Wallachia defied the Great Powers and united themselves in the joint Rumanian principality, which attained complete independence in 1878 by the Treaty of Berlin and declared itself a kingdom in 1881. In recent years Rumanian nationalism has been greatly stimulated by the study of the Roman colonization of Dacia and the attempt of Xénopol and the Rumanian historians to trace the relationship between the ancient Romans and the modern Rumanians. The racial composition of the Rumanians is a complicated question. Ripley believes that the original substratum of the Rumanian people was an ancient Eurafrican population like that which originally settled Russia and constituted the progenitors of the Nordic race. Among these there settled a considerable number of Roman colonists in the 2d century. In the west the Slavs came in very large numbers following the 6th century. In the 13th century the Mongols swept over this district, and in the 16th the Turks conquered it. As a consequence, Rumania is not homogeneous racially, but shows the predominant influence of the Slavs in the west and of the primordial long-headed Eurafrican stock in the east. The Rumanians vary from very broadheaded in the Transylvanian district of Hungary to relatively longheaded in the region of the delta of the Danube, and are uniformly short and stocky in stature. The language of modern Rumania is a Romance dialect resembling classical Latin almost as much as some of the variations of medieval Latin. This is in well-nigh universal use to-day among Rumanians. Perpetuated in parts of this region from classical times, this language has become a vital element of recent Rumanian nationalism and has been systematically extended and adopted since 1860, to the general exclusion of the previous Slavic and Turkish dialects. In religion the Rumanians are chiefly Greek Orthodox. There are about 10,500,000 Rumanians, some 6,250,000 living in Rumania proper, 3,000,000 in Transylvania, a little over 1,000,000 in Bessarabia, 275,000 in the eastern Bukowina and about 40,,000 in northeastern Serbia. Added to these there are about 1,250,000 non-Rumanians living in what constituted the pre-war Rumanian state.

8. The Bulgarians.—Across the Danube to the south of Rumania are to be found the Bulgarians of the pre-war Bulgaria, and of southern Macedonia, southern Dobrudja, and eastern Thrace. Populated originally by the same longheaded Eurafrican race that had settled the Rumanian portion of the lower Danubian plain, this district was invaded in the latter part of the 7th century by the Bulgars, an off-shoot of the Finns. They founded, in 679, the first Bulgarian kingdom, which endured until the conquest of Bulgaria by the Byzantine empire in 1018. Under Tsar Simeon (893–927) the Bulgarian kingdom developed to considerable proportions and became the strongest of the Balkan states. Recovering from the Byzantine conquest the Bulgars established a second kingdom in 1186 which reached the height of its power under Ivan Asen II (1218–41). In the middle of the 13th century Bulgaria was ravaged by the Mongols and was finally conquered by the incoming Turks between 1340 and 1396. The beginning of the Bulgarian national revival dates from about 1830. The brutality of the Turks in Bulgaria in 1876 precipitated the momentous Russo-Turkish War of 1877–78. By the Treaty of Berlin of 1878 Bulgaria was granted autonomy from the Turk, but was unnaturally separated into two principalities, Bulgaria and East Rumelia. In 1885, the Bulgars broke down this artificial division and formed the united principality of Bulgaria. Twenty-three years later the Bulgars took advantage of the embarrassment of the Turks during the civil war of 1908 and declared their independence of Turkey and proclaimed Bulgaria as a kingdom. By the unfortunate Second Balkan War of 1913 Bulgaria was estranged from the other Balkan states. Racially the Bulgarians are highly composite. In the west the contact with the Slavs has made the Alpine racial characteristics most prominent, while in the east the traits of the primordial Eurafrican or proto-Nordic race prevail. The Finnish or Bulgar invaders of the 7th century have had almost no significance for Bulgaria other than political. Racially they have long been assimilated in the original population and in the neighboring and invading Slavs. Turkish occupation has left traces of the Asiatic racial traits. Swarthy in complexion and short in stature, the Bulgars vary from extreme broadheadedness in the west to longheadedness in the east. The Bulgarian language is now a definite Slavonic dialect, the original Finnish language having definitely disappeared centuries ago. In religion the Bulgarians are solidly Greek Orthodox, but the Bulgarian church is independent of the organization of the Greek Church. The best estimates put the truly Bulgar population of Bulgaria at about 4,000,000 at the outbreak of the World War, which number constituted over 75 per cent of the total population, the largest non-Bulgar group being Turks. In addition to these there were about 1,250,000 Bulgarians in southern Macedonia under Serbian rule and a very considerable number in the hinterland of the northern Ægean, in the Dobrudja district and in the portion of Turkey adjoining Bulgaria.

9. The Jugo-Slavs.—Extending eastward from the western boundary of Bulgaria to the head of the Adriatic Sea is found the home of the Jugo-Slavs (i.e. the Southern Slavs), the Slovenes of Carniola, Carinthia, Styria and Küstenland; the Croats of Croatia; the Serbo-Croats of Slavonia, Bosnia and Herzegovina; and the Serbs of Serbia, Montenegro and a portion of the Banat of Temesvar. The Jugo-Slavs are the southern contingent of that general Slav incursion into central Europe in the 6th and 7th centuries. They were separated from their northern kinsmen in the 9th century by the Magyar invasion which drove a wedge between the two branches of the western vanguard of the Slavs. The Slovenes have never created an independent state, but have alternated between German and Italian control and are to-day primarily Germanic in most phases of their culture other than their language.

Croatia was the first of the Jugo-Slav districts to develop a strong and coherent political organization. From 800 to about 1100 Croatia enjoyed a distinguished existence as an independent duchy and then as a kingdom, but from the beginning of the 12th century to the present most of it has been controlled by Hungary. Serbia became a powerful kingdom in the 13th century and under Stephen Dushan (1331–55) developed into the most extensive Balkan power that has existed since the decline of the Macedonian empire. The independent Serbian kingdom was overthrown by the Turks at the Battle of Kossovo in 1389, and by 1459 the southern Slavs were completely conquered by the invading Turk. Serbia remained in a condition of subjection until the beginning of the national revolt in 1804. The right of self-government was obtained in 1830 and complete independence recognized in 1878. In 1903 the corrupt and Austrophile Obrenovitch dynasty was eliminated by the brutal assassination of the royal family. The rival Karageorgevitch dynasty which succeeded to the throne, in spite of its disgraceful mode of regaining power, brought to Serbia a more liberal and efficient political system and encouraged a revival of Serbian national sentiment, which has been intensified by Austrian aggression in the annexation of Bosnia and Herzegovina in 1908 and the creation of Albania in 1913. The little mountain kingdom of Montenegro can boast of having been the only Slavic state of the Balkan Peninsula to defy Turkish conquest. After three centuries of ineffectual attempts to conquer these warlike Serbs the Turks recognized their autonomy in 1799 and their complete independence in 1878. From the standpoint of race the Jugo-Slavs are the purest and finest type of Alpine Slavs. This is probably due to their more isolated habitat which has prevented as much intermixture of races as in central and eastern Europe. They are very tall and broadheaded brunettes, of so fine a physical type that Deniker has designated them as a separate race — the Dinaric, but, as there is no doubt that they are true Alpines, this attempt to classify them as a distinct sub-type seems but a needless further complication of an already highly confusing subject. The Slovene language differs from the Serbo-Croat, but is an allied dialect. The Serbian language is the purest Slav dialect of the Balkan Peninsula and the Croatian language is merely Serb written in Latin characters. In religion the Slovenes and the Croatians are Roman Catholic, while the Serbs are Greek Orthodox. The total population of the territory inhabited by the Jugo-Slavs is estimated at about 14,000,000, of whom about 12,000,000 are Jugo-Slavs. Of the Jugo-Slavs a little over 8,000,000 are Serbs and Serbo-Croats and the remainder mainly Slovenes. A recent estimate has summarized the distribution of the Jugo-Slavs as follows: Serbia, 4,500,000; Croatia and Slavonia combined, 2,650,000; Bosnia and Herzegovina, 1,900,000; Slovenia, 1,600,000; Dalmatia, 650,000; Istria, 403,000; and Montenegro, 440,000.

10. The Albanians.— To the southwest of Serbia lies the little mountain state of Albania, inhabited by a group of hardy, primitive and warlike mountaineers. Albania, by a fiat of the Austrian government, was advanced in 1913 from a tribal condition to independent statehood, in the effort of Vienna to shut off Serbia from an outlet to the Adriatic. Albania has had no distinct history but has existed as a group of warring tribes since classical days. Racially the Albanians are regarded by Ripley as identical with the Serbo-Croats, but other authorities hold that they are descended from the older pre-Slavic Mediterranean or Eurafrican race. In culture the Albanians are a strange mixture of Greek, Slav, Turk and Italian. In religion the Albanians are divided between the Mohammedans, Greek Orthodox and Roman Catholics, the Moslems being the most numerous. Certainly southern Albania or northern Epirus belongs to the Greeks on the basis of both culture and national feeling. It is estimated that there are about 1,000,000 Albanians living in the Albanian state, though there are many Albanians scattered about in adjacent districts.

11. The Greeks.— The southernmost extension of the Balkan Peninsula and its adjacent territory and islands is the habitat of the Greeks of Greece, Epirus, western Thrace, Cyprus, the islands of the Ægean and the western coast of Asia Minor, who, whatever the actuality, regard themselves as the descendants of the Greeks of the age of Pericles and Aristotle. The Greeks were conquered by the Romans in 146 B.C., but retained most phases of their culture and imposed it upon the Byzantine empire, founded by Constantine in 330 A.D. The Greeks remained under the control of the Eastern empire until the occupation of Hellas by the Turks between 1423 and 1460, except for a short period following the fourth crusade (1204–61), when a Latin empire was established, and the later temporary conquest of a part of Greece by Stephen Dushan in the middle of the 14th century. By their own gallant efforts and through the aid of Russia, France and England the Greeks were awarded their independence in the Treaty of Adrianople (1829) and established as a kingdom in 1832. Receiving some territory by the Treaty of Berlin (1878) the Greeks have since made great strides in advance, especially after 1909 under the leadership of their exceedingly able and statesmanlike premier, Eleutherios Venizelos, who reorganized the Greek state and prepared it for the victorious war against the Turks in 1912–13, by which Greece was greatly increased in population, territory and prestige. The modern Greek prides himself not only upon his cultural heritage from classical Greece, but also maintains his direct physical descent from the Attic Greeks. In spite of many invasions of the Greek Peninsula between classical times and to-day by non-Greek peoples, such as Avars and Slavs, it is true that in some districts, especially in Thessaly, Attica and the Peloponnesus, the modern Greek has retained the characteristics of the original Mediterranean race to a remarkable degree. The "Greeks" of Asia can scarcely be regarded as Greek in race, but rather in their national feeling and in some superficial aspects of their culture. The Greeks speak a language which is a debased form of the ancient Attic Greek, but since the Hellenic revival of the last century it has been systematically improved and brought back closer to the classical form. In religion the Greeks belong almost without exception to the Greek Orthodox Church. There are about 4,500,000 Greeks

in the Greek state, about 2,000,000 in the Ægean Islands and along the coast of Asia Minor, some 150,000 in Epirus, nearly 200,000 in Macedonia, about 350,000 in the city of Constantinople and about 400,000 in western Thrace, where they constitute a majority of the population.

III. The Small Nations in the Period of the European War.

Only the briefest summary of the salient facts involved in the participation of the small nations in the hostilities of the World War can be attempted here. For a more detailed account the reader must be referred to the sections dealing with the military operations in the war.

While there were many signs of the old national separatism among the Finns from the outbreak of the war, they participated in the military operations to a greater or less degree along with the other portions of the Russian empire, though the traditional enmity of the Finns toward Russia early led them into negotiations with Sweden and intrigues with Germany. The outbreak of the active revolt against Russian domination, which followed the March Revolution of 1917 in Russia, began in August of that year. In December 1917 the Finns declared their independence of Russia, and by the forced Treaty of Brest-Litovsk, 3 March 1918, Russia was obliged to recognize the full independence of Finland and to agree to evacuate Esthonia and Livonia. Great Britain and the United States recognized the independence of Finland on 5 May 1919 and on 25 July of that year the Finns elected as their president the liberal statesman and publicist, Professor Stalberg. Down to the period of the German conquest the state of affairs in the districts inhabited by the Letts and Lithuanians was not widely different from that which obtained in Finland, as far as their relations with the Russian empire were concerned. Most of Lithuania was conquered by the Germans in 1915, and the Letto-Lithuanians were not indisposed to accept the change of masters. The Teutonic conquerors stimulated the desire for independence, which was declared by the Lithuanians at Vilna in January 1918. They elected a president and received recognition from some of the European states during 1919. The Letts have also established a provisional government following a declaration of independence from Russia. This new state, Letvia, was seriously threatened by a German occupation in 1919, but the Allies intervened. From the outbreak of the war it seemed evident that at its close the Poles would realize a greater amount of autonomy than they had enjoyed since the Revolution of 1830, if not since the period of partition. On 15 Aug. 1914 the tsar gave out a proclamation promising autonomy to Russian Poland after the war, and also to German and Austrian Poland, in case Russia should conquer and hold them in the course of the conflict. However, the tsar's anticipations as to conquest were not realized and the Germans began to occupy portions of Poland very soon after the outbreak of hostilities. Hindenburg's severe defeat of the Russians at Tannenberg in September 1914 opened the way for the German advance and Poland was occupied in the summer of 1915, following the famous retreat of Grand Duke Nicholas in August of that year. By the Treaty of Brest-Litovsk Russia was forced to abandon Russian Poland. At the close of the war Poland declared its independence and elected a constitutional convention, which met on 9 Feb. 1919. The new state was soon recognized by several powers and a general recognition of the independence of Poland was included and implied in the Treaty of Peace submitted by the Allied Powers to Poland on 28 June 1919. Following the Russian Revolution of 1917 the Ruthenians of the Ukraine showed signs of restlessness, promoted by the severity of the Russification policy during the early years of the war, and later in the year began a definite movement for independence. The Treaty of Brest-Litovsk provided for the Russian recognition of the independence of the Ukraine, but the Ruthenians suffered severely as a result of the accompanying Teutonic invasion. The Czecho-Slovaks fought in the early years of the war on the side of the Austrians, though without great enthusiasm. The nucleus of the Bohemian revolt was the group of Czecho-Slovak prisoners of war captured by the Russians during General Brussilov's great drive into Galicia and detained in Siberia. They refused to abide by the terms of the Treaty of Brest-Litovsk and rebelled and conquered the city of Vladivostok when the Bolshevik government refused them transit across Siberia to join the Allies. On 18 Oct. 1918 the Czecho-Slovak National Council, sitting at Paris, drafted a declaration of independence. On 28 October a republic was declared, and on 14 November Thomas G. Masaryk, the distinguished statesman, publicist and Slavonic scholar, was elected the first president. The Poles, Ukrainians and Czecho-Slovaks entered into an armed conflict over disputed boundaries, and the Czecho-Slovaks were also involved in a disastrous conflict with the Soviet government of Hungary during the summer of 1919. The Magyars fought loyally with the Austrians during the greater part of the period of hostilities, but the development of signs of ultimate defeat for the Central Powers produced a separatist spirit in Hungary. On 17 Oct. 1918 the Hungarian Diet declared itself independent of all bonds of union with Austria, save only the personal union created by the fact that Emperor Charles of Austria was also the king of Hungary. On 3 November the Hungarians declared their complete independence of Austria and on 16 November a republic was formally proclaimed. The liberal régime established under Count Karolyi was overturned by the failure of the Allies to protect Hungary from invasion and by what the patriotic Hungarians regarded as the severe terms likely to be imposed upon Hungary at the Peace Conference, and a Soviet government was formed by Bela Kun and his associates. The refusal of the Allied Powers to deal with this government did much to retard the final settlement of territorial problems in central and southern Europe.

Rumania, after much vacillation, due in part to changes in the personnel of rulers and party leaders with somewhat different sympathies, and also to the failure of the Allies to create a favorable diplomatic and military situation to aid the pro-Ally group in Rumania, came into the war on the Allied side on 28 Aug. 1916, when it looked as though an early defeat of the Central Powers was assured.

Rumania's action was also hastened by a practical ultimatum from France demanding her entry into the war on the Allied side. Poorly equipped and not taking sufficient care to guard their communications, the Rumanian forces rapidly invaded Transylvania as they had been directed by France in the military agreement, but their very speed, combined with the failure of the Allies to co-operate as they agreed, proved their undoing. They were attacked on their flanks and rear by Generals Falkenhayn and Mackensen with the armies of the Germans, Austrians and Bulgarians. So swift was the reversal of the Rumanian fortunes that by January the enemy had driven the Rumanians out of Transylvania and had captured the most fertile portion of Rumania, its valuable oil-wells, and the capital, Bucharest. A separate peace was forced upon Rumania, compelling the cession of the Dobrudja to Austria and Bulgaria, though Rumania was in part compensated by the addition of Bessarabia. With the triumph of the Allies at the close of 1918 the German forces were withdrawn and the pro-German party ousted from power.

After a long period of higgling with the contending groups over the most favorable terms, Bulgaria went into the war on the side of the Central Powers in October 1915. The loss of Bulgaria was one of the most stupid and tragic blunders of Allied diplomacy, as about all that Bulgaria asked in return for aid to the Allies was the undoing of the injustices of the second Balkan War. Another serious error on the part of the Allies was the failure to carry through the only sane alternative policy, namely, to allow the Serbian army to anticipate the Bulgarian attack by a Serbian invasion of Bulgaria and the capture of Sofia, the key to the Balkans. The aid of the Bulgarian army helped materially to alter the whole military situation in the Balkans. Serbia and Albania were overrun, the Pro-German party in Greece was strengthened and a year later the Bulgarians gave important assistance in the conquest of Rumania. The collapse of the Bulgarian military power, however, was rapid at the end. By a vigorous attack of the Allied forces which had been long in training at Salonica, the Bulgarian armies were divided and defeated in detail. The attack began on 15 Sept. 1918 and on the last day of the month Bulgaria surrendered unconditionally to the Allied forces.

Serbia was the first of the Balkan states to enter the war, the Austrian ultimatum of 23 July 1914 being the immediate occasion of the outbreak of hostilities. Austria declared war on Serbia on 28 July. Montenegro joined Serbia in the war against Austria on 8 August. The success of the Serbians varied in the opening campaigns. At first the Serbians successfully resisted Austrian invasion and themselves invaded Bosnia. In November the Austrians were able to capture Belgrade, but were driven out of Serbia in the following month. No important further developments came until the entry of the Bulgarians in the fall of 1915. Austro-German-Bulgarian forces invaded Serbia on 6 Oct. 1915. The Serbs fought gallantly, but were forced to retire before superior numbers, and by 12 December the Serbian army had been forced to flee into Albania and Montenegro, from which a nucleus of about 125,000 made their way to Salonica and became the most active element in the Allied forces operating from that base. The Serbian disaster was due to the failure of the Allied military authorities to land a sufficiently large force at Salonica to intimidate the Bulgarians, win over the Greeks and save Serbia, and to the failure of the Allies to allow an aggressive campaign by Serbia at the moment of the discovery of the evident intention of Bulgaria to join the Central Powers. The fall of Serbia cleared the way from Germany to Turkey. Serbia was overrun by the Bulgarians, the royal family fled to France and the government was re-established, first at Corfu and later at Salonica. The Serbian army was reorganized and re-equipped at Salonica and participated with great distinction in the defeat of the Bulgarians in September 1918, and subsequently cleared the enemy out of Serbia and Albania. On 1 Dec. 1918 a union of all the Jugo-Slavs, including Montenegro, was proclaimed, though there has been some subsequent indication of restlessness over Serbian domination. A considerable period before Italy's entry into the war she landed forces in Albania, 25 Dec. 1914. After the Serbian debâcle the Bulgarians and Austrians overran Albania in January and February 1916. In the winter of 1916–17 the Italians began to recover Albania, and by July 1918 they had joined with the Allied forces operating from Salonica. At the close of the war the Allied army was rapidly clearing Albania of the armies of the Central Powers. There has been as yet little evidence among the Albanians of any unified sentiment as to the type of government or mode of political union which shall prevail after the war.

Premier Venizelos of Greece made vigorous efforts to get Greece into the war on the side of the Allies, but King Constantine was notoriously pro-German in his sympathies and Venizelos was compelled to resign with his cabinet on 7 Oct. 1915. Venizelos continued to criticize the inactivity of the king and his party and on 28 Sept. 1916 he fled to Salonica and established a provisional government, which he regarded as in a state of war with Bulgaria and Turkey. His government was recognized by the Allies on 16 Oct. 1916 and it formally declared war on Turkey and Bulgaria, 25 Nov. 1916. The pro-Ally sentiment grew in Greece and on 12 June 1917 King Constantine abdicated, along with the pro-German crown prince, leaving the throne to his second son, Alexander. On 27 June Venizelos returned as premier of the new government. In the final Balkan campaign of September-October 1918 the Greek army took an honorable part. It will, of course, be understood that all occupied territory in the region of the small nations was treated with a varying degree of savagery and existed in a state of utmost physical suffering and economic depletion, especially in the cases of Poland, Serbia and Rumania.

IV. The Peace Conference and the Attempt at a Reconstruction of the Small Nations According to the Principle of National Self-Determination.

1. The Difficulties in Applying the Principle of Nationality to the Reconstruction of Europe.— The principle of national self-

determination as applied to the reconstruction of Europe meant, in its most fundamental and general sense, the redrawing of the map of Europe, so that state lines would coincide with the ethnographic boundaries of the distinct national units which had been heretofore either thwarted in obtaining complete political unity or had been denied any political independence and existence whatever. This guiding tenet of nationality had, however, to be accepted by the Peace Conference with reservations and had to be governed by good judgment and common sense, or its enforcement would have resulted merely in a return to something near complete political anarchy. As Mr. Zimmern has pointed out:

"If the sentiment of nationality were admitted as a sole and sufficient claim for a change of government French Canada would pass to France, Wisconsin to Germany, and part of Minnesota to Norway, while the New York police would become servants of the new Home Rule government in Ireland. The theory which makes national feeling the criterion of Statehood can easily be reduced to an absurdity."

Were there available space it would be most instructive to summarize what is known about the claims presented by the small nations at the Peace Conference. It is perfectly obvious that in many, if not most cases, the claims have embraced all the territory to which the most shadowy pretensions could be advanced, apparently in the hope that after extensive reductions in the original claims the territory assigned would be somewhat more than what each nation could hope to receive on the basis of the facts in the case. Such representative conflicting claims as those of Italy and Jugo-Slavia to Dalmatia, Istria, Fiume and Trieste; of Albania and Greece to Epirus; of Greece and Bulgaria to Macedonia and Thrace; of Greece and Italy to the Dodecanese Islands; of Rumania and Bulgaria to the Dobrudja; of Serbia and Bulgaria to western Macedonia; of Rumania and Serbia to the Banat; of Rumania and the Ruthenians of Galicia to Bukowina; of Poland, Czecho-Slovakia and the Ukraine to eastern Galicia; of Poland and the Ukraine over their boundary line; of Poland to Lithuania; of Czecho-Slovakia and Poland to upper Silesia; and of the Poles and Germans to Posen and West Prussia afford overwhelming proof that the principle of strict fairness and a conciliatory and compromising policy have not guided these states or potential states in their negotiations at Paris. They have apparently decided to stake the future of their nations upon the success which might attend their "higgling in the boundary market of Paris." While these extreme claims put forth by the small nations have created political and diplomatic problems of the first magnitude, they are so obviously out of accord with a true application of the national principle in the contested regions that they may be passed over without further mention. Attention may be given to a brief survey of what has so far been achieved by the Peace Conference in redistributing the territory inhabited by the peoples of the lesser states and in granting political independence to the suppressed nations.

2. The Achievements of the Peace Conference.—Any summary at the present time of the reconstruction of boundaries in central and eastern Europe must necessarily be unsatisfactory on account of the absence of a final and definite settlement of the problem by the Peace Conference in many of the largest areas where some sort of a redistribution of territory was rendered inevitable by the war. In particular does this statement apply to regions formerly a part of Russia or Hungary, for the Allies have steadily refused to enter into formal peace negotiations with the Soviet government of Russia or the late Soviet government of Hungary. In addition to this cause for delay in the settlement, there have been many others, especially the above-mentioned conflicting claims of the small nations, and the secret agreements made among the Allied states during the progress of the war, which have been most difficult of fulfilment in harmony with the principle of national self-determination. Finally, the necessity of taking many plebiscites to determine exact boundary demarcation, and the difficulties inherent in this process through racial and national complications have operated further to obstruct progress.

As was stated in a previous paragraph the Finnish peoples have declared their independence from Russia and their statehood has been recognized by leading Allied powers. The exact details of the Russo-Finnish boundary cannot be determined, however, until the final settlement is arranged with Russia, and the Allies manifest an unwillingness to treat with the existing Soviet government. The final arrangement of relations between Finland and Esthonia is still unsettled, though it seems certain that ultimately a single Finnish state will be established of a unitary or a federal character, though from the declaration of 1918 up to the present time Esthonia has asserted independence of both Russia and Finland. The Finns in both provinces have been involved in a serious difficulty in defending themselves against invasion by the Soviet government of Russia, which has shown as ardent a spirit of Russification and Pan-Slavism as was exhibited by Pobiedonostseff and Nicholas II. The Letts of Courland and Livonia declared their independence of Russia in 1918 as the new state of Letvia. While the final disposition of the Lettish question must await the settlement with Russia, Mr. Balfour, speaking for the Allies, declared that until the ultimate settlement the Allies were willing to "grant provisional recognition to the Lettish National Council as a *de facto* independent body." The Letts, like the Finns, were attacked by the Bolshevik forces, and later their territory was occupied by the Germans under von der Goltz. He was compelled to begin withdrawal by an Allied ultimatum of 28 Sept. 1919, but the Letts have been obliged to resort to force of arms to insure and expedite the evacuation. Lithuania declared her independence in January 1918 and on 4 April 1919 proclaimed herself a republic and elected M. Smatona as the first president. The Peace Conference, however, failed to recognize Lithuanian independence. The aggressive Pan-Polish party, supported by the French at the Conference, have urged the incorporation of Lithuania within the new Polish state on the ground of the historic union of the two nations before the partitions. The final adjustment will doubtless wait upon the Russian settlement, but whatever the outcome, it has been clearly shown above that neither the facts

of ethnography nor the principle of self-determination would warrant the inclusion of Lithuania within the new Poland. In spite of no formal final action by the Peace Conference all of the Allied powers have recognized the independence of Finland, all but the United States the independence of Esthonia and Letvia, and some lesser powers and Great Britain have recognized the independence of Lithuania. The action of the United States in delaying the adjustment of the Baltic situation is hard to defend; the only excuse stated being that it means a dismemberment of Russia, a process which has not acutely depressed the representatives of the United States when it has taken place in other parts of the former Russian empire.

Of all the new states created or recognized by the Peace Conference Poland has advanced the most ambitious claims and has succeeded best in getting them recognized by the Conference. From Germany Poland has received about 28,000 square miles of territory, including most of Posen and West Prussia and some of southeastern Silesia. A plebiscite is to decide the redistribution in East Prussia. Danzig has been internationalized as a free city open to Polish trade. The delimitation of the boundaries between Poland and Lithuania, Russia, Hungary and Rumania must await the Russian and Hungarian treaties, though it is already evident that only vigorous opposition on the part of Lithuania and the Ukraine has prevented the Conference from agreeing to Polish annexation of Lithuania and absorption of eastern, or Ruthenian, Galicia. In spite of such opposition it seems likely that the Allies will allow a far greater Polish occupation of Lithuanian, Russian and Galician territory than ethnographic facts would justify. Confirmation of this opinion is to be found in the action of the Peace Conference on 21 Nov. 1919, when it turned over eastern Galicia to Poland for 25 years, in spite of the fact that the district is overwhelmingly Ruthenian in population. Poland, Germany and Czecho-Slovakia have engaged in a struggle of arms over the disposition of southeastern Silesia, prized by the contending parties on account of its mines and factories. The general treaty of peace submitted to the Poles by the Allies on 28 June 1919 was opposed by the former on account of the guarantees to subject nationalities living within Poland. The ultimate fate of the Ukraine was not definitely decided by the Peace Conference, but will be included in the Russian settlement. The Allied treaty with Germany abrogated the terms of the Treaty of Brest-Litovsk, and the Poles and Pan-Slavists have thus far prevented the Conference from recognizing the independence of the Ukraine by representing the Ukrainians as in sympathy with Bolshevism. It would seem, however, that the independence of the Ukraine will be sooner or later confirmed by the Allies, though there will be difficult boundary problems to settle, particularly the Galician boundary with Poland and the agreement with Russia over the disposition of Odessa. The Russian situation is still further complicated by affairs in White Russia. Poland desires to annex much of this area, and there has also developed a distinct movement for independence.

The solution of the Czecho-Slovak problem has been in part reached by the Peace Conference. Its independence has been confirmed and some of its boundaries settled. The German treaty provided that the boundary with Germany should be the old Austro-German boundary with some slight cessions in Silesia to Czecho-Slovakia. The Austrian treaty, signed on 10 Sept. 1919, included the Austrian recognition of the independence of Czecho-Slovakia and the delimitation of the boundary with Austria, which followed, in general, the old boundary of Bohemia and Moravia, with some slight gains for the Czecho-Slovaks, especially on the east. It was also stipulated that Czecho-Slovakia should have access to the sea through Austrian and Hungarian territory. The boundaries with Poland and Hungary are still to be fixed. The nature of the union with Slovakia is unsettled. The Czechs desire the incorporation of Slovakia with Bohemia and Moravia; the Slovak extremists desire independence, and the Magyars urge autonomy under Hungarian oversight. It is probable that the outcome will be some sort of a union with the Czechs. The settlement with Hungary has been greatly delayed by the effects of the deplorable and indefensible treatment of Count Karolyi and his government by the Allies, which resulted in the establishment of a Soviet government with which the Allies would not deal. The Austrian treaty gave to Austria certain of the German districts of western Hungary. The remaining boundaries will await final determination until the Hungarian treaty is presented. It seems generally admitted, however, that Hungary will have to surrender the Jugo-Slav districts, Transylvania, Bukowina, the Banat and Slovakia, and is certain to become one of the lesser of the «small nations.»

The reconstruction of the boundaries of Rumania has not as yet advanced to any definite stage, owing to the failure of the Allies to adjust matters with Russia and Hungary, from which states Rumania hopes to receive her chief cessions of territory. At the present time it seems generally conceded that the Conference will grant to Rumania the Rumanian portions of the Banat and Bukowina, Transylvania and a part of Bessarabia. Rumania has occupied both Transylvania and Bessarabia and has treated the latter with considerable severity. The pro-Russian party in Bessarabia protested against Rumanian methods to the Peace Conference on 23 Sept. 1919. The Rumanians in Transylvania have expressed a desire for union with Rumania and were annexed on 11 Jan. 1919. It is doubtful, however, if the Allies will assign to Rumania any more of Bessarabia than can be shown to be predominantly Rumanian in nationality, and thus far the Conference has refused to grant any of Bessarabia to Rumania. On 1 Nov. 1919, however, Rumania formally announced to the Peace Conference the annexation of Bessarabia. The relations between the Allies and Rumania may be somewhat altered on account of the recent Rumanian occupation of Hungary and the refusal of the Rumanians to evacuate it after Allied requests for such action. Among all the small nations Bulgaria has, with the possible exception of Hungary, received the most severe treatment at the hands of the Peace Conference. Instead of attempting to undo the injustices to Bulgaria which were included in the treaty following the

second Balkan War of 1913, the treaty handed by the Allies to Bulgaria on 19 Sept. 1919 actually intensified and increased the unfairness. While application of the principle of nationality to the readjustment of Bulgarian boundaries would require the cession to Bulgaria of Macedonia south of the Shar Mountains, of much of the hinterland of the northwestern coast of the Ægean, of Dobrudja south of Constanza and of eastern Thrace and Adrianople, the peace terms provide for no significant extension of Bulgarian territory whatever, but rather for some considerable contraction of Bulgarian boundaries. At four places on the Bulgarian-Serbian boundary slight "rectifications" are made in favor of Serbia, and Bulgaria is forced to give up to the Allies for subsequent allotment a large portion of Thracian territory on the northern coast of the Ægean. This temporary postponement of a final award of Thrace led to a vigorous Greek propaganda directed toward proving the rectitude and justice of the claims of Greece to this area. The Rumanian boundary remains unchanged, though there have existed some hints to the effect that Rumania will be urged to return to Bulgaria the strictly Bulgarian Dobrudja. In addition to territorial cessions, heavy economic burdens are imposed on Bulgaria by the peace terms and her army is reduced to an insignificant force of 20,000 men. An indefinite promise of commercial access to the Ægean is included in the treaty. It is the opinion of the most alert and critical authorities that the peace treaty with Bulgaria was designed to make her continued independence so difficult, if not so intolerable, that she will seek union with the new Jugo-Slav state.

While the situation will not be determined until the signing of the treaty with Hungary it seems certain that the Jugo-Slavs will attain unto complete political independence. The Austrian treaty recognizes the independence of the "Serbo-Croat-Slovene State." Montenegro is to be merged with Serbia and the emancipated provinces in the new state. While the Serbian hegemony in the Jugo-Slav state seems likely to endure, there has developed much opposition to Serbian methods, particularly on the part of the royal party in Montenegro and on the part of the Croats. Jugo-Slavia and Rumania seem destined to become the two great powers of southeastern Europe and they have already begun to quarrel over the disposition of the Banat. The fate of Albania has not been decided upon, but it would seem that the intense Albanian hatred for all of her neighbors will by a sufficient barrier to annexation by any of them and will require autonomy under the mandate of some great power other than Italy.

While Greece presented to the Peace Conference an ambitious and not reasonable aspiration to annex northern Epirus, Thrace, Constantinople, the eastern coast of Asia Minor and a number of Ægean islands, including the Dodecanese islands held by Italy, she has not as yet been able to realize her aims. She seems destined to obtain something over half of Thrace, the Asia Minor coast and most of the islands claimed. She appears to be blocked in the desire to obtain all of Thrace and Constantinople by the present Allied plan to constitute out of the remainder of Thrace a free state with Constantinople as its capital under a mandatory power. A sinister Italian intrigue in regard to Albania has prevented Greece from receiving her wholly just allotment in northern Epirus. But if Greece fails on account of Italian jealously to obtain all the territory she set out to secure there is no doubt that she will issue from the war stronger and more populous than at any other time since the fall of the old Byzantine empire.

If space were available one might carry this discussion into a consideration of the disputed territory in the extreme southeastern Europe and in western Asia, such as Kouban, North Caucasia, Azerbaidjan, Georgia, Armenia, Syria, Mesopotamia, Persia, Arabia and the new proposed Jewish colony in Palestine, but this territory involves problems of so widely different a character and such relative ease of solution that they may be passed over with this mere allusion. The principle of nationality might in justice be applied to the reconstruction of western Asia, which has at last been freed from the rule of the intolerable Turk. While the Turk can claim, under cover of the national principle, a more or less independent state in Asia Minor, national independence should certainly be extended to Georgia, Armenia, Syria, Palestine, Arabia and Persia, and, if a sufficient demand exists, to the Zionist settlement in Palestine. The internal peace and order of these new states and their security against foreign aggression should, and doubtless will, be guaranteed through their supervision by a more advanced and powerful state according to the mandatory system. From the Anglo-Persian Agreement of 9 Aug. 1919 and the Anglo-French Agreement of 16 Sept. 1919 over Syria, it would appear clear that France and England plan to take over the districts of western Asia which were dominated before the war by Turkey, Germany and Russia. It is difficult at present to predict how far they will respect the principle of national self-determination in this area. The candid analyst of political reconstruction on the basis of nationality will also be likely to be skeptical of any reasons brought forward to deny the application of the principle to Egypt and Korea, though it might readily be conceded that the mandatory power in these cases should be exercised by Great Britain and Japan, respectively. As the Monroe Doctrine is recognized in the Covenant of the League of Nations, it will devolve upon the United States to compel the respect of the principle of nationality in the western hemisphere and to require the "small nations" of this half of the world to abide by the dictates of international law and morality.

V. The League of Nations and the Small Nations.

In view of the fact that the League of Nations has not begun to function completely, it is obvious that its relation to the small nations can only be inferred from the sections of the Covenant which relate directly to this matter and from the interpretative discussions of the subject by leading publicists. It will readily be apparent that the most fundamental relation of the League to the problem of the small national states which have been recently created or extensively increased in territory is its contributions to the lessening of the probability of

more wars resulting from the emergence of a greater number of national states. To bring into being more politically independent nations than have hitherto existed, without at the same time making provision for reducing the probability of war arising out of their mutual disputes, would be but an invitation to a recurrence of the interminable warfare which accompanied the rise of the national dynastic states of the 16th and 17th centuries. The probable causes of an increase of warfare arising from the addition to the number of independent states are chiefly disputes of a general nature between states, and quarrels among them or with greater states over matters connected with their boundaries. The League endeavors to reduce the probability of wars among all states, including the smaller states, which would arise out of general causes for open conflict by the provisions of Article VIII of the Covenant, providing for the reduction of armaments, and by Articles XI-XVII which endeavor to substitute the arbitration of disputes for the cruder method of adjustment through armed conflict. The reduction of friction which would inevitably arise over boundary disputes is met by the provisions of the much discussed and equally misunderstood and misinterpreted "Article X," to the effect that "the members of the League undertake to respect and preserve as against external aggression the territorial integrity and existing political independence of all members of the League." If this article is enforced, as it must be if the League possesses any vitality whatever, the small states will be protected from the aggression of the larger states and of combinations of smaller states which desire to acquire their territory or terminate their political independence. No such policy as that contemplated by the Central Powers toward Serbia in 1914 would be possible if Article X were effectively enforced. It has been frequently argued that the obvious injustices in the redistribution of territory among the small states at the Peace Conference make it undesirable that the existing boundaries be maintained and that the perpetuation of the settlement arranged at Paris would be unwise and unjust. In view of the fact that the present adjustment was the best that could be had under the circumstances and that its immediate disruption would bring a vastly greater disaster than is involved in the existing minor injustices, it would seem that the guaranteeing of the present arrangement against forcible violation is one of the most indispensable policies which could be devised in the interests of the advancement of peace. It is generally agreed by the authoritative interpreters of Article X that it does not mean that the present arrangement must remain permanent and inflexible, even in the face of voluntary desire to readjust boundaries. Some even maintain that it would be possible for the League to alter the boundaries at any time it seemed desirable, but it would also appear that the large majority required for effective action in any such procedure would protect any small state against arbitrary interference with its existing and desired boundaries. One of the obviously desirable modes of future peaceable readjustment of boundaries by the League is the encouragement of voluntary and mutually beneficial unions among the small states which would increase their economic power and resources and harmonize with the admitted tendency of political evolution to produce large political entities, though care should be taken not to promote the formation of larger states of a distinctly antagonistic character. Again, in light of the consideration that these small states existed as a whole or in part as oppressed minorities within greater states before the war, it is plain that they should not be allowed after their own emancipation to proceed to a similar oppression of lesser national minorities within their boundaries. While there is no specific guaranty of the rights of minorities included in the Covenant of the League, this important matter is provided for in the various treaties of peace arranged by the Paris Conference, which specifically and often in great detail stipulate the protection of minorities, and which will be enforced by the League if it becomes operative.

In regard to the organization and administration of the duties of the League, there is one aspect which particularly relates to the small states, namely, the representation of the states in the various organs of the League. It has in the past invariably proved true that one of the chief obstacles to the efficient functioning of international bodies has been the desire of small states to possess an equality of voting power and their equally evident aim to avoid assuming the impossible equality of duties and responsibility. That this weakness has not been wholly avoided in the present arrangement of the League of Nations is certain from the provision that "at meetings of the Assembly each member of the League shall have one vote," while at the same time it declares that "the expenses of the Secretariat shall be borne by the members of the League in accordance with the apportionment of the expenses of the International Bureau of the Universal Postal Union." It will be evident, further, that the small states will not contribute an equal number of soldiers or a similar amount of money to the cause of enforcing the actions of the League. It can be said, however, that this weakness is to some extent offset by the preponderance of the greater states on the Council of the League.

It will be apparent, therefore, in conclusion, that through the instrumentality of the League of Nations, and in that way only, can the lesser national states be emancipated and elevated to statehood with a very considerable benefit to the totality of civilization and with no serious or dangerous drawbacks resulting therefrom.

Bibliography.— In view of the fact that the rise of nationality and its problems was the most important political development in the 19th century, the literature bearing upon the subject of national problems and disputes leading to and growing out of the World War embraces nearly all the political histories, general and special, dealing with the events and movements of the last century. The most serviceable guides which have yet appeared in English indicating the more important books in this whole field are E. B. Krehbiel's 'Nationalism, War and Society' (1916); George Matthew Dutcher's 'A Selected Critical Bibliography of Publications in English Relating to the Great War,' published as Part V of Albert E. McKinley's 'Collected Materials for a Study of the Great War' (1918); and 'The Causes of the War: What to

Read,' published by the Council for the Study of International Relations (London 1918). Professor Dutcher's bibliography contains much more critical comment on the books enumerated, but his list is limited to English and American publications or translations in English and to books or pamphlets. The English bibliography contains little critical discussion of the volumes enumerated, but is much more comprehensive, including the more important foreign books and the most significant pamphlets and magazine articles. Each pamphlet covers the whole field of the modern history of both the great and small nations. See also NATIONALISM.

The meaning of the term *Nationality* and its allied concepts is dealt with in a number of books and pamphlets. A very clear discussion of its nature and relationships is contained in Ramsay Muir's 'Nationalism and Internationalism' (1917), pp. 37ff., and in Theodore Ruyssen's 'What is a Nationality?' translated by John Mez as Bulletin No. 112 of the 'Publications of the American Association of International Conciliation,' March, 1917. The best scientific demonstration of the lack of any correlation of race and language with nationality is contained in William Z. Ripley's 'Races of Europe' (1899), Chapter ii. The whole subject of nationality is analyzed by Israel Zangwill in his little book, 'The Principle of Nationalities' (1917), a work of real literary merit and considerable critical acumen. A very clear demonstration that nationality in its essence is a psychological and cultural fact rather than political is to be found in A. E. Zimmern's 'Nationality and Government' (1918), pp. 32-60. The principle of nationality is analyzed with great power, if in an unfavorable light, by Lord Acton in his essay on "Nationality," reprinted in his 'History of Freedom and Other Essays' (1909). An admirable syllabus indicating the most significant problems connected with nationality and giving the more important literature dealing with each field is to be found in Edward Krehbiel's 'Nationalism, War and Society' (Part I).

On the history of the development of the national principle and system, see NATIONALISM, THE HISTORICAL DEVELOPMENT OF. The most extended general discussions of the history of nationalism are to be found in Ramsay Muir's 'Nationalism and Internationalism' (1917), and J. Holland Rose's 'Nationality in Modern History' (1916), which admirably supplement each other. A good review of the development of national unity and national spirit in modern Europe since 1815 is provided in the brilliant volume on 'The War and Democracy' (1918), by R. W. Seton-Watson and others. While most of these writers are not unfair in their arraignment of the development of German nationalism, they create a very inaccurate impression by ignoring the exuberant development of an ardent national spirit in France and England in the last generation, and by dealing softly with the brutal and aggressive Pan-Slavism of Pobiedonostseff and his associates. The authoritative, comprehensive and impartial history of nationalism is yet to be produced, but there are three brilliant and incisive critical discussions: the above-mentioned work of Zangwill; "What is National Spirit?" by James Harvey Robinson (*Century Magazine*, 1916); and "The War of the Nations," by Carlton J. H. Hayes (*Political Science Quarterly*, 1914). For the details of the political history of Europe, in which the development of nationalism plays so large a part, the reader may be referred to the 'Cambridge Modern History' and to the standard manuals of Lynn Thorndike, J. H. Robinson, C. M. Andrews, C. D. Hazen, Ch. Seignobos, Robinson and Beard, C. J. H. Hayes and J. S. Schapiro. Andrews and Hazen are relatively sympathetic with national aspirations, while Robinson and Beard, Hayes and Schapiro have produced works which are especially valuable for their synthesis of the economic and political factors producing the world of to-day. The recent period is covered more fully in Holt and Chilton's 'European History, 1862–1914' (1917), and H. A. Gibbons' 'New Map of Europe' (1915). Extensive treatments of the whole field are to be found in the volumes of the Cambridge and Oxford Historical Series.

The best general introduction to the problem of the small nations in its territorial and international aspects is, perhaps, the temperate and comprehensive essay by James Bryce "The Principle of Nationality and Its Applications," in his 'Essays and Addresses in Wartime' (1918), chapter vii. A moderate and well-reasoned plea for the political emancipation of the more advanced "small nations" is embodied in Thomas G. Masaryk's 'The Problem of the Small Nations in the European Crisis' (1916). An excellent brief survey of the obstacles to the realization of this program is contained in chapters iv–v and vii of 'War and Democracy.' The best compendium of information in the English language relating to the formerly repressed and recently emancipated European nationalities, as well as those in western Asia, is Lothrop Stoddard and Glenn Frank's 'The Stakes of the War: a Summary of the Various Problems, Claims and Interests of the Nations at the Peace Table' (1918). This work takes up in succession the various national and boundary problems in Europe and the Near East, gives a brief survey of the historical, economic, racial and territorial factors involved and then presents the several possible solutions which have been proposed, indicating in each case the elements of strength and weakness in the proposal. It is not a readable narrative, but frankly a semi-encyclopedic compilation, generally accurate and relatively impartial. A more detailed analysis of the same field, with the author's own solution of the problems involved in the reconstruction of the map of Europe, according to the principle of nationality, is set forth in Arnold J. Toynbee's 'Nationality and the War' (1915). While not always recognizing the standards of impartiality, this is probably the most satisfactory work yet contributed in English to the analysis of the problems of national reconstruction in Europe. A work which purports to deal mainly with the linguistic basis of national units in Europe, but which in reality is a general survey, though not well proportioned, of the territorial, economic and political factors involved is Leon Dominian's 'The Frontiers of Language and Nationality in Europe' (1917). While not always accurate in the refinement of detail this is a most valuable work, giving a thorough analysis of the language problems involved in the question of the small nations, and supplying a large

amount of historical data. The *National Geographic Magazine* for December 1918, is wholly devoted to a long and interesting article on "The Races of Europe" by Edwin A. Grosvenor. While inaccurate in many matters of statistical detail and hopelessly confusing the terms "nation" and "race," this is a very interesting and valuable survey with the admirable illustrations for which this publication is so justly famed.

Among the most valuable works of the detailed treatments of specific areas are the chapters devoted to the small nations in the appropriate volumes of the 'Cambridge Modern History'; Reade, A., 'Finland and the Finns' (1915); Lewinski-Corwin, E. H., 'Political History of Poland' (1917); Hill, N., 'Poland and the Polish Question' (1915); Phillips, W. A., 'Poland' (1915); Gibbons, H. A., 'Poland and the Reconstruction of the Near East' (1917); Sands, B., 'The Ukraine' (1914); Steed, H. W., 'The Hapsburg Monarchy' (1913); Von Schierbrand, W., 'Austria-Hungary' (1917); Maurice, C., 'Bohemia' (1896); Benés, E., 'Bohemia's Case for Independence' (1917); Seton-Watson, R. W., 'Racial Problems in Hungary' (1908); id., 'Rumania and the Great War' (1915); id., 'The Rise of Nationality in the Balkans' (1917); id., 'The Balkans, Italy and the Adriatic' (1915); Mariott, J. A. R., 'The Eastern Question' (1917); Miller, W., 'The Ottoman Empire' (1913); Taylor, A. H. E., 'The Future of the Southern Slavs' (1917); Peacock, W., 'Albania' (1914); Savic, V. R., 'Southeastern Europe' (1918); Monroe, W. S., 'Bulgaria and Her People' (1914); Petrovich, W. M., 'Serbia' (1915); Forbes, Toynbee, et al., 'The Balkans' (1915); "Polybius," 'Greece before the Conference' (1918); Cassavetti, D. J., 'Hellas and the Balkan Wars' (1914); Brailsford, H. N., 'Macedonia' (1906); and Lupu, N., 'Rumania and the War' (1919). The only scientific comprehensive analysis of the races of Europe and the Near East is contained in Ripley's 'Races of Europe' (1899), which needs a revision bringing it down to date and including the valuable ethnographic investigations conducted in the last 20 years. The problem of the disputed boundaries and the matter of establishing boundaries of different types is discussed by Holdich, Sir Thomas, in his 'Boundaries in Europe and the Near East' (1917); and by Lyde, L. W., 'Some Frontiers of To-Morrow' (1915). G. De Greef's important discussion of the futility and danger of purely political frontiers in his 'La Structure générale des Sociétés' (1908) is not available in English, but a general summary of his position is presented by A. A. Tenney in the *Political Science Quarterly*, September 1910, pp. 502–08. The geographical problems complicating the settlement of national claims are fairly well discussed by Dominian, but a detailed treatment of the geography of the Balkans in its nationalistic bearings is provided in Newbigin, Marion I., 'The Geographical Aspects of the Balkan Problems in their Relation to the Great European War' (1915), and in Hogarth, D. G., 'The Nearer East' (1902).

The periodical literature dealing with these problems is very large in volume, especially since the Balkan Wars of 1912–13 and the World War. First and foremost in the list of periodicals discussing national problems in Europe must be put the recently founded *New Europe*, edited by a group of the ablest and most liberal of the English and other European historians. Its articles have given evidence of the best scholarship and a generally liberal and impartial spirit. *The Journal of Race Development* (now *The Journal of International Relations*), edited by Prof. George H. Blakeslee, has given special attention to these problems during the progress of the European War. The *National Geographic Magazine* has published a large number of elaborately illustrated articles on the chief repressed nations of Europe during the last few years. Many of these have been of a high order. Most of them are referred to in the footnotes of Dr. Grosvenor's abovementioned article in the issue of December 1918. *The Geographical Review*, published by the American Geographical Society, has recently printed several valuable articles dealing with European boundary problems. *The New York Times Current History Magazine* has devoted many pages to the discussion of the various national and boundary problems involved in the European settlement. The numbers since the signing of the armistice in November 1918 have been especially valuable in this connection. A new semi-monthly periodical devoted entirely to the area under discussion in this article and entitled *Eastern Europe* was founded in September 1919. *The New Republic* and *The New York Nation* have also given much space to these questions, which have been discussed in a uniformly liberal and constructive manner.

Space does not allow a summary of the more important books dealing with the general problem of a League of Nations and its organization and functions. A good annotated bibliography on this subject by Frederick C. Hicks is to be found in Bulletin 134 of the 'Publications of the American Association for International Conciliation,' January 1919. The standard treatment of the subject to date is the composite work edited by Stephen P. Duggan, 'The League of Nations: The Principle and the Practice' (1919), with ample bibliography. For a list of references on the history of internationalism consult the bibliographies in Krehbiel, part III.

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22. POST-WAR PROBLEMS AND RECONSTRUCTION IN THE BALKANS. One of the greatest problems or series of problems which claim the attention of the statesmen of both the Old World and the New is to arrive at an equitable adjustment of the numerous and often conflicting claims of the Balkan states. These lands of southeastern Europe, so far from having reached a solution of their peculiar racial and territorial problems through the military operations in that theatre from 1914 to 1918, have emerged from the throes of the conflict with greater and more puzzling complexities than ever before, with the possible exception of the new Serbo-Croat-Slovene State (Jugoslavia), formed from the kingdoms of Serbia and Montenegro, and the former Austrian crownlands of Bosnia, Herzegovina, Croatia, Dalmatia and Slavonia.

After the adjustment of the boundary and territorial claims of the several nationalities,

a most difficult problem in itself due to the fact that the populations of these states are more or less intermixed racially and linguistically, there remain for settlement the problems of providing adequate means for the transportation to tidewater of the agricultural and other products of these states and of affording to each an outlet for its commerce through a national seaport. Other problems of the period under discussion will be referred to in the course of the article.

The one great Balkan problem, past and present, is transportation. The elaborate system of Roman roads, improved and extended by the mediæval republics of Venice and Ragusa, has well nigh disappeared. The Balkan lands differ to-day from the rest of central Europe chiefly because in the period during which the latter reached its most rapid development they lay prone under the heel of the Turk. As these Balkan peoples gradually freed themselves of the Turkish yoke, they found themselves economically strangled, partially because the most favorable trade outlets were in the hands of their powerful neighbors, Austria-Hungary and Russia, partially also because they were denied an outlet to the sea through the natural obstacle in the shape of a mountain wall which separates the heart of the Balkan Peninsula from the Adriatic. This barrier (the Dinaric Alps) offers peculiar engineering difficulties to railroad and road construction from the interior to the coast, and such construction is also rendered impracticable by the fact that no amount of expenditure of labor and money can construct a good port along that coast. Fiume is the logical outlet to the sea for Jugoslavia and is the only good port on that side of the peninsula. It is also the terminus of the one good railway to the interior which reaches Belgrade through Agram. A railroad has been projected from Spalato to Serajevo and thence inland to the heart of Old Serbia, but the capital needed is excessive in view of the probable returns, and the special construction problems it offers will require much time, hence this line does not promise a speedy solution of the Serbian transportation problem. A narrow-gauge road extends from Ragusa to Serajevo, which renders valiant service subject to its limitations. To make this road of standard gauge is impracticable for the reasons already given. Another railway project is the route from Prizren along the old Roman road to the gulf of San Giovanni di Medua. The objection to this from a Jugoslav viewpoint is that the latter port is Albanian territory. These routes practically exhaust the possibilities for a Jugoslav national seaport in Dalmatia, which is literally the lungs through which commercial Jugoslavia must breathe unless Salonica on the Ægean be opened to it through some arrangement after the manner of the German Customs Union or Zollverein. Such arrangement would naturally include Greece, within whose national territory the port of Salonica lies. Salonica is the only Jugoslav outlet to the sea apart from those on the Adriatic described at length above. A Balkan Customs Union would immediately make Salonica one of the most important ports in the Mediterranean system, since it is the national outlet to the south for Thrace, Macedonia, Bulgaria and Jugoslavia. There has been proposed an inland waterway by canalizing the Vardar to the Morava and the latter to its junction with the Danube below Belgrade. Were such a waterway well developed it would become at once a large factor furthering the commercial development of the countries concerned. A great extension must take place in the railway system of Serbia—even the Belgrade-Salonica main line is not a first-class road—to render it adequate for the heavy traffic of a modern state would entail a larger expenditure than the region concerned could well meet.

Bulgaria is in an equally bad position in regard to transportation facilities. The natural outlets for its overseas commerce are the ports of Salonica and Constantinople, neither of which lies within its borders. A trunk railway to Varna on the Black Sea affords considerable relief but the fact of its being located in the extreme eastern end of the country and on the Black instead of the Ægean Sea makes it inconvenient and expensive to use.

Salonica is the port of export for the new Greek territories acquired as a result of the Balkan Wars. It is not the logical port for most of the trade of Old Greece, in fact, it is only since 1914 that it has had rail connection with Athens. There is a railway line from Salonica to Monastir through Ostrovo and it has been proposed to run a branch line from the last-named city to Avlona via Argyrokastro and Kastoria.

Railroad and road building have progressed further in Rumania than in the other Balkan states (if we may classify Rumania as a Balkan state), and does not present the same difficulties. During the war, the great bridge near Tchernavoda, the only one on the lower Danube, was partially destroyed and for many winter months most of the country was cut off from the one port, Constanza (Kustendje), which is open the year round. During the war Rumanian and Serbian territory being the scene of actual campaigns, a large proportion of the bridges were destroyed. These were repaired temporarily but the transportation for a long time was greatly handicapped; floods and storms often carried down the temporary wooden structures and tied up traffic for days at a time. Furthermore, about three-fourths of the rolling stock was either destroyed, worn out or carried away. The coming of peace did not secure the replacement of this stock from Germany and Austria-Hungary.

The Commerce Problem.—So much for the transportation problem; it now behooves us to inquire with whom are the Balkan countries to trade? These states cannot be expected to trade much with each other, since they produce for the most part similar commodities and their requirements are also somewhat similar. For the same reason there is no prospect of their developing a large volume of trade with Russia. Before the World War Germany and Austria-Hungary furnished the bulk of the imports, especially the manufactured goods, but they took no such proportionate part of the exports. Balkan merchants had become accustomed to the flexibility of the German credit system through their having transacted business with German wholesalers for generations. Consequently at the end of the war they were unprepared to buy for cash in Allied countries, and

at the same time assume the burdens of an unfavorable exchange rate, shipping costs, risks and delays incident to commerce in countries prostrated by years of war. The Germans are beginning to recapture this business. Their opportunity was rendered all the more easy because of the stiff and antiquated credit systems and foreign trade methods of the principal Allied countries and also because of the existing trade routes and a network of railroads to central Europe over which trade merely had to be resumed. In 1919 whatever part of the Balkan trade was going to the Allies through the port of Fiume was suddenly withdrawn and thrown open to central Europe over the old trade routes, when Italian soldiers occupied Fiume.

We might characterize as "industrial parasitism" the condition which already existed in the Balkans and was merely aggravated and brought into sharp relief by the war. The population had been rapidly increasing and life, externally at least, assumed a certain modernity through the use and on the basis of imported goods. Whole cities look in nearly all respects like those of western Europe — similar public buildings, hotels, streets, electric cars, lights, etc. This is of an ephemeral character because it is not a natural growth and these countries are unable to produce the goods on which it is based. Stop foreign trade for a considerable period and the railway cars and locomotives wear out and get out of repair. Not only is replacement, even of parts, impossible, but the mechanics themselves who do the work in normal times are very largely foreigners and their shop tools entirely so. The few shipyards get their engines and other machined parts from abroad. Dock machinery, cranes, all sorts of steel bridge materials, even railroad iron, must be imported, and these are only illustrative items out of myriads. This industrial dependency upon foreign nations causes the ruling classes in the Balkans to entertain perennial fears for the national existence and predisposes them toward diplomatic intrigue and militarism. Moreover, because of their lack of any considerable industrial development, these states also lack the steadying and democratizing influence of a large, intelligent middle class.

Reconstruction.— Reconstruction is much simpler in the Balkans than in countries highly developed industrially like Belgium, France or Austria, because the population is still small enough to maintain itself without a very complicated organization. In the Balkans there existed neither a great aggregation of factory machinery to be carried off or destroyed as was the case in Belgium and in France, nor any highly articulated organization to derange by stopping production and killing large numbers of specially trained men. The total prostration of Austria following the war illustrates the point under discussion as does also the condition of the Balkan states during the same period. Austria needed food and raw materials from abroad to rehabilitate her industries while the chief wealth of the Balkans consists to-day as formerly in agricultural products raised from year to year. Rumania and Serbia at the close of the war were about thoroughly stripped of the necessaries of life. In the towns people went without the most ordinary comforts — soap, thread, leather-goods, cloth and particularly everything manufactured out of metal. In the villages life apparently had not been changed to any great extent mostly because its simplicity did not admit of change.

In the months following the close of the fighting many persons starved to death and more would have perished had it not been for the relief afforded by the American Food Commission and Red Cross. This must not lead us to suppose that these organizations saved the countries in question from complete starvation and Bolshevism. When there is a shortage of food, they reduce their already simple civilizations to still lower terms.

In the year following the close of the war the remarkable thing to note was that although many communities had lost practically all their draft animals and such rude farm implements as they possessed, in spite of mobilization and a pinching shortage of seed, both Rumania and Serbia managed to plant and harvest fairly large crops. In the months just preceding the harvest season the most extreme want existed all over Rumania, Serbia, Montenegro and Albania. Plenty of grain was harvested and much of it was available for export. A shortage of fats was pronounced but in these countries the poorer people always lack fats. Rumania, for example, has more pellagra than any other country in Europe. Americans have a tendency to overlook this superior resiliency of simple civilizations which are not mechanized to the extent that they are.

By the time Europe shall have resumed its full productive capacity industrially the Balkans will also have practically recovered their pre-war appearance (in fact none of them but Jugo-slavia and Rumania really lost it). The great problem of European reconstruction here involved particularly affects the Balkan states because their population, while it has outgrown its primitive peasant stage, has not become industrially self-supporting. However, while Europe remains more or less crippled industrially, it is safe to say that the Balkans suffer less than the former great industrial centres of Europe.

The Race Problem.— Balkan race problems can be settled only by a general and naturally slow growth of tolerance. Re-drawing the boundaries in Macedonia and Thrace has not solved the race problem because, as in most of the other disputed regions, the different races are settled by communities or villages and these hopelessly mixed up. In the lands allotted to Serbia from the former kingdom of Hungary are many communities of Magyars, Germans, Rumanians, and Jews as well as Serbs. In the new Rumanian lands are not only the same mixtures in different proportions, but in Bukowina are found Ruthenes as well, and in southern Bessarabia exists as variegated an assortment as in Macedonia itself. For territory to change hands is generally bad in itself, especially when it has remained a long time in the possession of one state. An official language is adopted; postal, railroad and other officials of the new government assume their posts and schools get under way. In the Balkans, therefore, a change of allegiance means a change of language, and this in turn involves the dismissal of a great part of the trained personnel, a serious matter in countries where illiteracy is general. The race problem of the Balkans can best be met by

a reasonable set of boundaries with a fair degree of permanency and sufficient governmental liberality in dealing with alien communities to make those boundaries tolerable. It must not be supposed, however, that such a course will put an end to the race problem although it would do much to lessen friction arising therefrom.

Economic and Military Problems.—The race problem does not stand alone in the way of a peaceable settlement of Balkan ills; there are other elements, especially those of a military and economic nature, which enter into the problem and add to its complexity. With Turkey to the south, Hungary to the north and a mountain wall between them and the Adriatic, there was before 1913 little incentive or occasion for the Balkan governments to further the economic and commercial status of their countries, and they busied themselves chiefly with military affairs, politics and intrigue. In 1919 the jealousies between the states were particularly keen because the settlements ordered from Paris pretended to a certain finality and each state was anxious not to get the worst of an irrevocable judgment.

During the sessions of the Peace Conference in 1919–20 these rivalries were exemplified by the numerous claims laid before that body by the Balkan states. For instance, Macedonia and Thrace, with their seaport Salonica, were sought to be internationalized. These regions constitute one of the chief economic keys to the whole central Balkan region, of an interest at least equal to Constantinople itself to this particular section. A fertile strip of South Dobrudja of prime military importance was claimed by both Bulgaria and Rumania. The former claimed that if awarded to Rumania the latter would threaten the Rustchuk-Varna Railway and the chief Bulgarian port; while Rumania claimed that with this strip in the hands of Bulgaria the latter nation would be within easy striking distance of the Tchornavoda-Constanza Railway to the only port of Rumania which is ice-free. Both sides argued with historical phrases and presented more or less juggled race statistics, but the real reasons were chiefly military. A treaty of 1916 with the Allies gave Rumania the advantage here as also in the Banat to which the Jugoslavs laid claim. Here too economic and military reasons were of almost equal importance with the racial.

The chief objection of both Rumania and Jugoslavia was to the proposal of the Peace Conference to limit their sovereignty over racial groups within their borders.

Hungary's attack on Rumania in July 1919 furnished the test case for the Balkans of the Paris Conference's ability and determination to enforce its decisions. After a brief but very bloody struggle, the Rumanians defeated the Soviet troops. Paris forbade the completion of this victory by the occupation of the Hungarian capital. This proscription the Rumanian army ignored, placed Budapest and eastern Hungary under martial law and requisitioned some 60,000 tons of materials. (This figure is not large, relatively—it is less than 5 per cent of what the Hungarians removed from Rumania during their two years' occupation). The big powers in charge of the Paris Conference apparently did not have the hundred thousand or so of available soldiers required to make a serious demonstration in Hungary; so the Balkans witnessed their failure to coerce either their enemies or their Allies. The Rumanians offered to withdraw if the Conference could send enough troops for police. It became morally impossible to use Italian troops in the Balkans, when D'Annunzio took possession of Fiume in defiance of the Conference, and the Italian government was evidently not able to make them obey that body. The United States Senate failed to ratify the peace treaty, Japan was too distant to be considered, and French diplomats showed no great hostility to the claims of either sister Latin power. Territorial ambitions being satisfied or laid aside as impossible, chauvinism will inevitably weaken for lack of focussed attention and the Balkan governments can and must at last turn their attention to the development and modernization of their respective countries.

Greece.—Greece was tranquil for the most part during 1919, perhaps because she had not the same immediate cause for concern over the settlement as had other Balkan states. Very little of her territory was devastated in the war. She is a maritime power, and hence was the first to be opened up to foreign trade after the armistice. She entered the war late, so that her human losses were small compared with those of Serbia or Rumania. The most important fact of all was that she remained financially solvent—Greek money being exchanged at uniformly higher rates than either French or Italian, at least during 1919.

Albania.—Albania lacks wholly a governmental system and its probable fate for a decade or more will be to remain under a mandate to one of the great powers. In this country there is a woful lack of communications and while the population is rather homogeneous as to race, it is divided among three religious faiths—Greek-Orthodox, Mohammedan and Roman Catholic—a potent source of friction in a backward state.

Bulgaria.—Bulgaria's payment of 2,250,000,000 francs under the provisions of the peace treaty does not seriously menace her financial solvency. The country was not devastated, and still contains incredible amounts of goods and livestock—a good deal of this of Rumanian and Serbian origin. It is a country of small proprietors. The people are of sturdy stock, industrious and frugal, more favorably situated than were the French in 1870. Both the recent war and the most unfortunate one of 1913 are charged to the late King Ferdinand, who was a large factor in making the surprisingly liberal constitution, on paper, less so in practice. Both Bulgaria and Serbia have for years had single-chamber legislatures, elected by proportional representation. After Greece, Bulgaria probably will be the first Balkan country to recover from the war.

Serbia.—Serbia lost over half of her men in the war—about a fourth of the entire population. For all of Jugoslavia as at present constituted, about one-tenth of the population perished. To the Serbian national debt of $40,000,000 in the fall of 1915 have been added about $600,000,000 more by borrowings during the exile, while the country was being laid waste. Besides this $500,000,000 and more in debts, the Jugoslavs formerly belonging to the Dual Monarchy must assume their proportion of

the Austro-Hungarian obligations. This is a crushing burden for the new state, and one bitterly complained of. The new Democratic party (led by MM. Pribitchevitch and Davidovitch), which stood for radical agrarian reform and a thorough amalgamation of all the elements of the nation, resigned in 1919 over the claim of the Peace Conference and League of Nations for partial sovereignty over national minorities within Jugoslavia. After two failures, the Old Radicals (led by M. Protitch), managed to form a government; but Jugoslav politics may be regarded as very unstable. The Croatian Radical party is separate from the Old or Serbian Radicals. There is a Slovene Catholic party (Old Serbia is Greek Catholic in religion). There are many socialists in the ex-Hungarian lands, and in Croatia the National Club or Party of the Right stands for autonomy.

Rumania.— Rumania's internal affairs are perhaps the most incalculable of all. She had 220,000,000 *lei* ($44,000,000) in gold in the German Reichsbank, which sum was held by Germany to guarantee compliance with the Treaty of Bucharest (May 1918). During the occupation, the Central Powers emitted through a private bank in Bucharest (*Banca Generala Romana*) over two billion francs (*lei*) in paper. With these they made purchases in the country, and even abroad, leaving the notes to the Rumanian government to redeem according to the peace of Bucharest. About three hundred and fifty million francs in gold and some securities, privately and publicly-owned jewels, etc. (including the crown jewels), were sent to Moscow for safekeeping during the war. Nothing is known of the fate of this deposit. Presumably the Central Powers will eventually repay something of the stupendous sums they took from Rumania in money and goods, but the indemnities and reparations imposed upon them by the victorious Allies are so large in the aggregate as to make this a doubtful asset. Like Serbia, the occupied part of Rumania was stripped practically bare — the German official records, left behind, account for nearly four million tons, and livestock to a value of over six billion francs (pre-war valuation) have disappeared.

To cover over four billion francs in paper money alone (laying aside the question of a fairly large national debt and the financing of the reconstruction), there is in gold and securities a little over eight million francs, something like half of it in Russia — if it has not been stolen.

The Rumanian National Liberal party, led by Ian C. Bratianu, has divided all the crown and institutional lands among the peasants and also expropriated 2,000,000 hectares (nearly 5,000,000 acres) from the large proprietors, to be turned over to the peasants who actually work it. No proprietor can now hold over 500 hectares, and the only remaining estates even as large as this are those previously containing 10,000 hectares or more. The terms of the Bessarabian expropriation act were fixed by the local assembly, and are still more severe. Universal manhood suffrage was decreed for Old Rumania and Bessarabia in 1918; also a decree authorizing Jews who were actual residents to secure citizenship papers from the justice courts.

The chief opposition to the National Liberals comes from Take Jonescu. M. Jonescu began his career with the Liberals, seceded to the Conservatives in 1892, left that party to found a new one in 1908, returned to form a Conservative ministry in 1912, and is now leading a new split-off from the Conservatives known as the Conservative-Democratic party. He was strongly and consistently pro-French throughout the war. The old Conservatives are in bad odor because their leader, Marghiloman, formed a ministry under the Germans. General Averescu's "People's League" has some following, especially among the peasants. It stands for mild reforms. The Social Democrats have been persecuted and prevented from maintaining any strong organization since the beginning of the war. There are many socialists in the cities of Transylvania and Bukowina, and communistic doctrines flourish in the village communities all over the eastern part of what was Austria-Hungary. The Rumanian government has been handicapped in the persecution of radicals in these newly-acquired territories by the fear of making too many enemies. In Old Rumania there is less visible evidence of "Bolshevism" than in any country visited by the writer. In general, the Balkans are free from this, presumably because there are comparatively few town laborers, and the holdings in the country are generally small. For the moment, the main political issues in Rumania are the constitutionality of the Bratianu reforms and the question of whether foreign corporations shall be encouraged through large concessions to develop the country's resources. This is favored by Jonescu and opposed by the Bratianu government.

All the Balkan monarchies are decidedly limited, since the death of Carol of Rumania and the abdications of Constantine of Greece and Ferdinand of Bulgaria. King Ferdinand of Rumania is popular. He has maintained a scrupulously constitutional position since his accession in 1914. Prince Carol, who renounced the throne, had a number of escapades, and was regarded by many as erratic. Republican sentiment is strong in the lands taken from Austria-Hungary and Russia. This applies also to the ex-Hungarian parts of Jugoslavia. The Serbian king has had little real power in the government since the assassination of King Alexander and Queen Draga in 1903, after an attempt at arbitrary rule. King Peter is popular in Serbia.

Reorganized Serbia and Rumania, the two great southeastern European states arising from the war, now have their political and economic centres of gravity on the fringe of the Balkan Peninsula, if not actually outside. The long established trade habits and routes, political and economic machinery, centre in Budapest, Vienna and Berlin. They do not fit the new order; hence the future largely depends upon their necessarily slow reconstruction by the South Slavs and Rumanians. It is a stupendous task. If successfully accomplished, what we have called Balkan problems will be absorbed and integrated in the general European problem, and we shall hear no more of the "crude, raw races."

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gust); "P." 'The Union of Montenegro' (4 September); Seton-Watson, R. W., 'Bulgaria Before the Conference' (28 August); also G. Clenton Logio's article (7 August); Lady Ellinor F. B. Grogan's (26 August) and a series by Constantine Stephanove—these three for the Bulgarian point of view.

In *The Balkan Review*, beginning February 1919, the following are of interest: (1) ON SERBIA: *The Adriatic*, under "Problems of Peace" (March); Vesnitch, Mil. R., 'The Aspirations of Serbia' (May); Yedlowski, Dr. Yosep, 'Thoughts on the Adriatic Dispute' and Price, Crawfurd, 'Serbia's Financial Dilemma' (June). (2) ON BULGARIA: *Thrace*, under "Problems of Peace" (April); Venizelos, M. E. K., 'Bulgaria and Thrace' (August). The August issue is called the 'Bulgarian Peace Number,' and contains much matter on that state, largely hostile, e.g., Price, Crawfurd, 'The Bulgarian Memoranda'; "Vardarius" answers J. D. Bourchier's 'The Fate of Macedonia,' in the July 1919, *International Review*. (3) ON GREECE: The two articles cited above under Bulgaria, on Thrace; Politis, M. Nicholas, 'The Standpoint of Hellas' (May); Michalocopoulos, M. A., 'The Economic Future of Greece' (June).

Nicolas Basilesco's 'La Roumanie dans la guerre et dans la paix' (Vol. II, Paris 1919), is an exceedingly exhaustive discussion of the Rumanian point of view (see also Vol. I, ch. on political parties). G. Clenton Logio's 'Bulgaria' (London 1919), is a detailed, sympathetic analysis of the Bulgarian situation and viewpoint. Vladislav R. Savić's 'South-Eastern Europe' (New York 1918), does the same thing for Jugoslavia (written before the Peace Conference); consult also his article, "The Passing of the Balkans," *Yale Review* (1919, Vol. VIII, pp. 500–12).

For recent economic information consult Economic Supplement to *Review of Foreign Press*, published fortnightly in London by the General Staff, War Office, especially 1919 numbers for 29 January, 12 February, 12 March, 29 April, 11 June, 25 June, 9 and 23 July. The issue for 24 Nov. 1918, contains a detailed exposition of the Bulgarian land situation. *Current History*, October 1919, summarizes United States Commercial Reports of 30 August on Rumania and 6 September on Serbia, under "Among the Nations." Under this heading will be found a monthly digest of Balkan events.

Marion Newbigin's 'Geographical Aspects of Balkan Problems' (London 1915) gives a good general analysis of the transportation and other fundamentally geographical questions (does not include Rumania). For this and other Rumanian economic information, consult 'Die Rumänische Volkswirtschaft,' a very fine, accurate little handbook published in Berlin, (1917), for the use of the German army in Rumania. The larger Austrian Army handbook, 'Rumänien' (Vienna 1917, 785 pp.), is the most systematic statistical treatise on Rumania, but hastily compiled and not always accurate. The only way now to get up-to-date statistical information on the Balkans is to write or visit the appropriate ministry in the country concerned. The statistical annals of the Balkan countries are surprisingly good, but are always out of date even when issued—especially true now. The reports of the American Red Cross Commissions to the Balkans (Serbia, Montenegro, Greece, Albania, Rumania) contain valuable sections on economic and social conditions (so far available only in manuscripts). Dominian's 'Frontiers of Language and Nationality' (New York 1917) is a valuable and fairly accurate race handbook. Consult also Seton-Watson's 'The Rise of Nationality in The Balkans' (London 1917).

Out of the flood of propagandist books and pamphlets incident to the Peace Conference, the following seem to have special merit:

ALBANIA: "Memorandum to the Peace Conference" (International Conciliation, No. 128, New York, May 1919). In same issue, Mehmed Bey Konitza's article, "The Albanian Question."

BULGARIA: Iaranoff, Athanase, 'La Bulgarie economique,' (Lausanne 1919); Mishew, D., 'The Bulgarians in the Past' (Lausanne 1919); 'America and Bulgaria and Their Moral Bonds,' (Berne 1918); and 'Public Instruction in Switzerland and in the Balkan States' (Lausanne 1919), statistical treatment; Stephanove, Constantine, 'We; The Macedonians' (Berne 1919) and 'The Bulgarians and Anglo-Saxondom' (Berne 1919).

GREECE: "Polybius," 'Greece before the Conference' (London 1919); Venizelos, Eleutherios, 'Greece before the Peace Conference of 1919' (New York 1919); Phocas-Cosmetatos, S.-P., 'La Macedoine, son Passé et son Present' (Paris 1919), fine maps; Cassavetes, N. J., "North Epirus and the Principle of Nationality" (International Conciliation, No. 141, August 1919); also the debate in Congressional Record, 3 Sept. 1919, Vol. LVIII, No. 86, pp. 5017–21, especially speeches of Wm. S. Felton and Prof. George M. Bolling.

JUGOSLAVIA: Jovan, Cvijic, has two very fine articles in the *Geographical Review*: "The Geographic Distribution of the Balkan Peoples" (Vol. V, No. 5, May 1918) and "The Zones of Civilization in the Balkan Peninsula" (Vol. V, No. 6, June 1918). The Hungarian case against both Jugoslavia and Rumania is ably discussed by Pivany, Eugene, 'Some Facts about the Proposed Dismemberment of Hungary' (Cleveland, Ohio, 1919).

RUMANIA: Lupu, Nicholas, 'Roumania and the War' (Boston 1919), contains a good discussion of peasant co-operatives and popular banks. Otherwise, it is rather trite, and the manuscript is evidently old.

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23. COSTS OF THE WORLD WAR.—War costs are of two kinds—direct and indirect. Direct costs embrace all expenditures made by belligerents in carrying on hostilities; indirect costs include the economic losses resulting from deaths attributable directly or indirectly to the war, the value of property damaged or destroyed, the loss in production growing out of the transfer of men from civil to military pursuits, expenditures for war relief work, the costs of the war to neutral nations and the like. The direct costs of the European War, based on the most reliable statistics, were $186,333,637,097; the indirect costs have been estimated at $151,646,942,560, making the total

war bill $337,980,579,657.* It has been possible to appraise the direct costs fairly accurately. Of necessity the indirect costs can only be estimated for there is no unit of measurement by which they may be definitely fixed; no method whereby they may be reduced to a dollar and cents basis. Even in trying to determine the direct costs of the conflict one encounters many obstacles. Some of the countries which declared war participated therein so slightly that they have not seen fit to segregate their war expenditures from their general expenditures. Again, the figures given out by certain of the principal belligerents lack definiteness, and a tendency to exaggerate has been manifested in some of the statements. Furthermore, some of the big powers made expenditures which, for military reasons, have not been disclosed or with reference to which misleading information was given out. Nevertheless, the total of $186,333,637,097, mentioned above, is believed to be very nearly correct. The estimates of some statisticians, however, are higher. One authority has estimated that the seven major belligerents alone spent $194,000,000,000. Another, Edgar Crammond, in an address before the Institute of Bankers in London on 26 March 1919 asserted that the total direct costs of the war amounted to $210,175,000,000. Secretary of War, Newton D. Baker, has placed them at $197,000,000,000.

But notwithstanding all of these figures purporting to show how much money was spent to carry on the war, the fact is that it was fought mainly on credit, for the gold coin available at the outbreak of hostilities was not sufficient to have kept it going for more than 40 or 50 days. During the first three years of the war the average daily cost was $123,000,000. In 1918 it rose to $224,000,000. As will be shown by the following table, the amount of gold coin available in July 1914 was but slightly in excess of four and three-quarter billion dollars, or only a little over one-fiftieth of the sum that was spent for war purposes during the slightly more than four years of fighting.

GOLD RESERVES AS OF JULY 1914.

Great Britain	$190,000,000
France	830,000,000
Russia	800,000,000
Germany	390,000,000
Austria-Hungary	255,000,000
United States	1,184,000,000
United States banks	168,000,000
Argentina	200,000,000
Brazil	50,000,000
Other reserves	700,000,000
Total	$4,767,000,000

These are but approximate figures. It is probable that the gold supply was considerably in excess of the total as shown above. In Great Britain, for example, there is supposed to have been about $615,000,000 in gold coin in excess of the reserve in the issue department of the Bank of England. France's supply, likewise, appears to have been much greater than the table indicates. It is probable also that Germany had more gold at the outbreak of the war than she is credited with. Still, the war bill is so great as to make the fact apparent that had the nations been required to conduct the fighting on a cash basis it would have lasted but a very short time. In order, therefore, to carry on the conflict for the more than four years it lasted, all of the belligerents had to resort to the issuance of notes, paper money and promises to pay. Considerable sums were raised for war purposes in some of the countries by taxation, but it has been estimated that almost nine-tenths of the money expended was raised by loans, that is, by the sale of government notes, bonds and other evidences of debt upon which, in certain cases, interest will have to be paid for more than 50 years.

Taking into consideration only net expenditures (determined by deducting from gross expenditures all advances to Allies) Germany's war bill, exclusive of any indemnities she may be required to pay, exceeded that of any other belligerent. England's bill was the next largest France's was third; that of the United States, fourth; Russia's, fifth; Austria-Hungary's, sixth; and Italy's, seventh. These countries spent a combined total of $172,000,000,000, which when deducted from $186,000,000,000, the net costs of the war to all countries, leaves $14,000,000,000 to represent the combined expenditures of the minor belligerents. Below will be shown the war expenditures of each of the countries taking part therein.

I. DIRECT COSTS OF THE WAR BY COUNTRIES.

Allied and Associated Powers.

United States.—Although the last great power to enter the conflict, the net war expenditures of the United States amounted to $22,625,252,843. This was almost 20 times as much as the pre-war debt of the country and, as has been said, almost enough to have paid the entire costs of the government from 1791 to the outbreak of the great European struggle. It represented an expenditure of over $1,000,000 an hour from the moment America became a belligerent down to April 1919, and was sufficient to have carried on the Revolutionary War for a thousand years at the rate of expenditure during that struggle. England, a participant from the beginning of the war, spent but a little over $12,000,000,000 more than did America; France, not quite $2,000,000,000 more, and Russia, about $30,000,000 less. These figures suggest that had the war lasted another year the expenditures of the United States would have equaled those of Great Britain and Germany. As it was, her gross expenditures (her net plus her advances to the Allies) totaled $32,080,266,968 and exceeded the gross expenditures of France by approximately $6,000,000,000. Her advances to the Allies amounted to $9,455,000,000 in round figures, and exceeded the advances made by Great Britain to other belligerents by about $1,000,000,000. About two-thirds of the gross amount expended by America was raised by loans; the remainder by taxation, the plan from the beginning having been to pay one-third of the war bill out of revenues. This policy necessitated tremendous increases in taxes. Very few things were omitted from the taxable list, but incomes and war and excess profits were made to carry the greater part of the burden. Among other

*These are the figures of Prof. Ernest L. Bogart of the University of Illinois, whose volume, 'Direct and Indirect Costs of the Great World War' published by the Carnegie Endowment for International Peace, is recognized as perhaps the most authoritative work yet issued upon this subject.

increases the tax on distilled spirits was raised to $6.40 a gallon. Between the time America entered the war and May 1919 five government loans were issued. The first four were known as Liberty Loans and the fifth as the Victory Loan. The yield from these, to which will be added the approximate yield from the sale of War Savings Certificates, was as follows:

UNITED STATES LIBERTY LOANS.

First	$2,000,000,000
Second	3,808,766,150
Third	4,176,576,850
Fourth	6,993,073,250
Fifth (Victory)	4,500,000,000
War savings stamps (estimated)	1,000,000,000
Total	$22,478,416,250

Subscriptions to the first loan amounted to $3,035,226,850, an over-subscription of $1,035,226,850. The second loan also was over-subscribed, the subscriptions totaling $808,766,150 more than was accepted. All subscriptions to the third and fourth loans were accepted, but the fifth (Victory) loan was over-subscribed to the extent of $749,908,300, the total subscriptions amounting to $5,249,908,300.

The United States began advancing money to the Allies very soon after she entered the conflict. The following is a list of the advances made by her together with the names of the countries to which such advances were made:

ADVANCES TO ALLIES BY THE UNITED STATES.

Great Britain	$4,316,000,000
France	2,852,000,000
Italy	1,591,000,000
Russia	187,000,000
Belgium	341,000,000
Serbia	27,000,000
Czecho-Slovakia	50,000,000
Greece	43,000,000
Rumania	30,000,000
Cuba	10,000,000
Liberia	5,000,000
Total	$9,452,000,000

Great Britain.—Among the Entente Allies the war bill of Great Britain was the heaviest. Her expenditures totaled $44,029,011,868, but from this amount should be deducted advances to co-belligerents amounting to $8,695,000,000 leaving $35,334,011,868 to represent her net expenditures. About one-fourth of the money spent by her was raised by increased taxation. The greater portion of the remainder was raised by internal and foreign loans and by the sale of War Savings Certificates. Professor Bogart determines England's war costs by deducting from her total governmental expenditures for the years 1914–15 to 1918–19, inclusive, an amount equal to five times her normal expenditures for the year preceding the war, thus:

GREAT BRITAIN'S WAR EXPENDITURES.

1914–15	$2,802,367,665
1915–16	7,795,791,888
1916–17	10,990,563,550
1917–18	13,481,107,025
1918–19	13,896,505,940
	$48,966,336,068
Less five years normal	4,937,324,200
	$44,029,011,868
Advances to Allies	8,695,000,000
Net war costs	$35,334,011,868

Professor Bogart adds that these expenditures were met by revenues totaling $8,708,741,310 and borrowings amounting to $35,055,123,155. Of the $8,695,000,000 loaned by Great Britain to her Allies, $855,000,000 was advanced to her own dominions. The following table shows the advancements made by her:

GREAT BRITAIN'S ADVANCES TO ALLIES.

France	$2,170,000,000
Italy	2,065,000,000
Russia	2,840,000,000
Belgium	435,000,000
Serbia	90,000,000
Other Allies	240,000,000
Dominions	855,000,000
Total	$8,695,000,000

Great Britain's Colonies.—Despite the belief in German circles that Great Britain's entrance into the war would be the signal for a revolt upon the part of some, if not most, of her colonies, the facts are that every one of those colonies sprang to the aid of the mother country with both men and means. The direct war expenditures of these colonies totaled $4,493,813,072, as follows:

Canada	$1,665,576,032
Australia	1,423,208,040
Union of South Africa	300,000,000
New Zealand	378,750,000
India	601,279,000
Other British colonies	125,000,000
Total	$4,493,813,072

India's expenditures included a gift of $500,000,000 to the British government, a gift from the Maharajah of Nabha of $100,000, another from the Gaikwar of Baroda of $33,000 and still another from the Maharajah of Mysore of $330,000.

France.—Estimates as to the financial burden the war imposed upon France vary widely. A report made to the Chamber of Deputies in February 1919 fixes her expenditures at $36,400,000,000. Professor Bogart places them at $25,812,782,800 less advances to her Allies of $1,547,200,000, making her net expenditures $24,265,582,800. In determining the war costs of France, Professor Bogart adopts a method similar to that employed by him in determining the war costs of Great Britain, that is, he deducts from her governmental expenditures, ordinary and extraordinary, for the years 1914 to 1918, inclusive, five times the amount of her normal expenditures in 1913, as follows:

FRANCE'S WAR EXPENDITURES.

1914	$2,817,900,000
1915	4,560,800,000
1916	6,589,029,000
1917	8,374,185,000
1918	8,537,800,000
	$30,879,714,000
Less normal for five years	5,066,931,200
Gross cost of war	$25,812,782,800
Advances to Allies	1,547,200,000
Net costs of war	$24,265,582,800

France resorted to various methods to raise the funds needed by her to carry on the fighting. She issued four loans which brought her in a total of $11,012,200,000. Advances made to her

by the Bank of France and the Bank of Algeria amounted to $3,430,000,000. Great Britain advanced her $2,170,000,000 and the United States advanced her $2,852,000,000. Her revenues for the years 1914–18 amounted to $5,000,000,000, and yet when the end of the struggle came she had a floating indebtedness of almost $5,000,000,000 more.

Russia.— Broadly speaking, Russia may be said to have dropped out of the war in September 1917 when the Provisional Government, which supplanted the old Imperial Government, had to make way for the Bolsehviki régime. Up to that time the country's war expenditures had reached a total of $22,593,950,000. She raised the money by various methods — by bond issues, by foreign borrowings, by issuing treasury bonds and short-term treasury notes, by increased taxation and by enormous issues of paper money. Seven internal loans yielded her $6,176,000,000, as follows:

RUSSIAN WAR LOANS.

First	$257,500,000
Second	257,500,000
Third	515,000,000
Fourth	515,000,000
Fifth	1,029,000,000
Sixth	1,544,000,000
Seventh	2,058,000,000
Total	$6,176,000,000

From Great Britain Russia borrowed $2,840,000,000; from the United States $187,000,000; and from Japan $333,000,000. Her issues of paper money exceeded $8,000,000,000.

Italy.— The direct cost of the war to Italy was $12,413,998,000. Of this sum $607,840,000 represents her expenditures for mobilization and other military purposes between the outbreak of the war and 24 May 1915, the day she became a belligerent. Like all other belligerents, she increased taxes in order to raise war funds. She also borrowed large amounts from Great Britain and the United States. Five internal loans yielded as follows:

ITALIAN WAR LOANS.

Mobilization loan	$200,000,000
First	229,200,000
Second	602,800,000
Third	797,100,000
Fourth	1,224,600,000
Total	$3,053,700,000

Belgium.— Statisticians have experienced great difficulty in trying to determine the direct costs of the war to Belgium. With most of her territory under hostile control she was not in a position either to raise revenues or issue loans. Perhaps her borrowings afford the best index of her expenditures. These totaled $1,210,125,090. England loaned her for war purposes, $435,000,000; France, $434,125,090; the United States, $341,000,000. On 21 March 1919 the Belgium Minister of Finance asserted that Germany owed Belgium $1,930,000,000 for cash requisitioned during the war. However, as the Treaty of Versailles provides that Germany must restore to Belgium the amounts commandeered, these sums have not been included in Belgium's war costs.

Other Entente Allies.— The war expenditures of the other Entente Allies were as follows:

Rumania	$1,600,000,000
Japan	40,000,000
Serbia	399,400,000
Greece	270,000,000
Brazil, China, Cuba, Guatemala, Haiti, Honduras, Liberia, Montenegro, Nicaragua, Panama, Portugal, San Marino, Siam	500,000,000
Total	$2,809,400,000

Central Powers.

Germany.— Whether or not Germany was primarily responsible for starting the war, one cannot survey her pre-war plans without arriving at the conclusion that, in the opinion of her statesmen, war was inevitable and that she was preparing for it financially as well as militarily. As far back as the days of Frederick the Great she created a fund known as the "War Chest." Into it she placed $30,000,000 taken from the indemnity squeezed out of France at the close of the Franco-Prussian War. In July 1914 the funds in the "War Chest" totaled $51,000,000. In 1913, after France adopted compulsory military service, Germany enacted a law designed to raise $250,000,000 to be used in defraying the expenses of her own enlarged army. Soon after the outbreak of the war she enacted much legislation of a financial nature that undoubtedly was prepared in advance and for the purpose of meeting just such a contingency. Her gross war expenditures have been placed at $40,150,000,000 by her Minister of Finance. Her advances to co-belligerents totaled $2,375,000,000, leaving her net war costs $37,775,000,000. At first she did not materially increase taxation but raised most of the money expended by her through loans similar in many respects to the American Liberty loans. Before the war ended, however, necessity had driven her to the taxing of almost everything taxable. In the meantime she kept up her policy of issuing periodical loans, issuing nine all together. These yielded as follows:

GERMAN WAR LOANS

First	$1,220,250,000
Second	2,276,500,000
Third	3,040,000,000
Fourth	2,692,000,000
Fifth	2,674,750,000
Sixth	3,280,515,000
Seventh	3,156,415,000
Eighth	3,691,500,000
Ninth	2,608,489,925
Total	$24,640,419,925

Austria-Hungary.— The war cost Austria-Hungary $20,622,960,000, all of which she borrowed Its outbreak found her in very bad financial conditions. Her debt in 1914 was extremely burdensome, and her credit was more or less impaired. During the preceding decade she had borrowed large sums of money, prac-

tically all of which had been used to increase her armaments. This suggests that she too expected war and was doing her best to prepare for it. In financing the war Austria and Hungary issued separate loans and made separate borrowings from the Austro-Hungarian and other banks. The following table shows the borrowings of the dual monarchy during the war:

AUSTRO-HUNGARIAN WAR LOANS

	Austrian loans	Hungarian loans
First	$440,149,400	$235,067,400
Second	535,664,400	226,507,000
Third	840,520,000	396,972,000
Fourth	904,058,400	386,000,000
Fifth	892,922,000	405,000,000
Sixth	1,075,000,000	506,000,000
Seventh	1,117,000,000	738,000,000
Eighth	1,152,600,000	772,000,000
Totals	$6,957,914,200	$3,665,546,400
Austro-Hungarian Bank advances	3,560,000,000	2,156,000,000
Advances by other banks	2,000,000,000	512,000,000
Treasury notes discounted	280,000,000	1,134,000,000
Foreign loans	8,500,000	348,000,000
Totals	$12,806,414,200	$7,815,546,400
Grand total		$20,622,960,600

Turkey and Bulgaria.— The war is said to have cost Turkey $1,430,000,000. Bulgaria spent $815,200,000. Its close found each country in a bad financial way.

The following table shows in condensed form the net costs of the war to the different belligerents:

NET DIRECT COSTS OF THE WAR.

Allied and Associated Powers.	
United States	$22,625,252,843
Great Britain	35,334,011,868
British colonies:	
Canada	1,665,576,032
Australia	1,423,208,040
New Zealand	378,750,000
India	601,279,000
Union of South Africa	300,000,000
Other colonies	125,000,000
France	24,265,582,800
Russia	22,593,950,000
Italy	12,413,998,000
Belgium	1,210,125,090
Rumania	1,600,000,000
Japan	40,000,000
Serbia	399,400,000
Greece	270,000,000
Other Entente Allies	500,000,000
Total	$125,746,133,673
Central Powers.	
Germany	$37,775,000,000
Austria-Hungary	20,622,960,600
Turkey	1,430,000,000
Bulgaria	815,200,000
Total	$60,643,160,600
Grand total	$186,333,637,097

The increases during the war in the national debts of the various belligerents afford another means of approximating the costs of the war. The table at the bottom of page shows these increases.

II. INDIRECT WAR COSTS.

Loss of Human Life.— Since, as Professor Bogart so truthfully says, "the loss of human life and the race deterioration resulting from war are the most appalling and permanent costs of the war, for they affect not merely the present, but are traceable through future generations," the deaths resulting from the European War deserve first consideration in any attempted tabulation of the indirect costs of that great struggle. Professor Bogart cites official reports by the major belligerents and semi-official reports by most of the minor belligerents to prove that of the soldiers who took part in the European War, 9,998,771 made the supreme sacrifice. These appalling figures become even more appalling when it is remembered that the death toll of all of the wars fought during the preceding 125 years, beginning with the Napoleonic War of 1790 and ending with the Balkan War of 1912–13, was only about one-half as great. The tragic story of the deaths resulting from the European War, however, does not stop with the known dead. To that painfully long list must be added, according to various statisticians, 50 per cent of the soldiers reported as "prisoners or missing" to account for those who were so mutilated that they could not be identified or who were so blown to pieces that not even a trace of them was left. The "prisoners or missing" list, at the time the reports above referred to were given out, embraced 5,980,600 names. Fifty per cent of that number would add 2,991,800 to the fatal casualty lists and bring the known and presumed dead among the soldiers up to 12,990,570. Before one can recover from the shock occasioned by the contemplation of so many deaths among the very flower of the world's manhood, one learns from Professor

NATIONAL DEBTS BEFORE AND AFTER THE EUROPEAN WAR.*

COUNTRIES	Before	After	Increase
United States	$1,103,000,000	$26,116,000,000	$25,013,000,000
Great Britain	3,444,000,000	37,985,000,000	34,541,000,000
British colonies:			
Canada	544,000,000	1,796,000,000	1,252,000,000
Australia	182,000,000	1,420,000,000	1,238,000,000
India	1,470,000,000	2,225,000,000	755,000,000
New Zealand	487,000,000	756,000,000	269,000,000
South Africa	614,000,000	774,000,000	160,000,000
France	6,346,000,000	34,842,000,000	28,496,000,000
Russia	4,537,000,000	†25,750,000,000	21,213,000,000
Italy	2,921,000,000	15,600,000,000	12,679,000,000
Belgium	156,000,000	4,000,000,000	3,844,000,000
Germany	1,194,000,000	37,150,000,000	35,956,000,000
Austria-Hungary	1,044,000,000	25,799,000,000	24,755,000,000
Turkey	843,000,000	1,485,000,000	642,000,000
Bulgaria	223,000,000	486,000,000	263,000,000
Totals	$25,108,000,000	$216,184,000,000	$191,076,000,000

* These figures relating to the national debts of the different belligerents were supplied by O. P. Austin, statistician of the National City Bank of New York.

† October, 1917.

Bogart that to the deaths among the soldiers must be added 10,000,000 more to cover the deaths among civilians resulting from causes attributable directly or indirectly to the war. All wars have been accompanied by an increase in the civilian death-rate, but, as Professor Bogart says, "it remained for the Great World War to establish a new record in this, as in so many other aspects." Various causes were responsible. Famine and cold cost hundreds of thousands of lives. Epidemics took their toll—the Spanish influenza, responsibility for which has been laid at the war's door—is said to have caused 6,000,000 deaths, 1,200,000 of which occurred in the United States. More than 4,000,000 Armenians, Syrians, Jews and Greeks are said to have been massacred while the war raged. One-third of the population of Poland is said to have been wiped out; 2,000,000 Russians are said to have perished; deaths among the Rumanians numbered 800,000. Germany also lost 800,000 civilians, while deaths from famine in Austria and Serbia numbered nearly 1,000,000. In the occupied areas of France there was a tremendous increase in the death-rate; in Belgium, strange as it may seem, the increase was nothing like so pronounced. Approximately 100,000 fishermen and sailors lost their lives in mined waters or from other causes for which the war was directly responsible.

In determining the value of the human lives lost during the war Professor Bogart has adopted the figures of M. Barriol, the noted French actuary, who, 10 years ago, estimated the average social value of an individual in the six leading countries to be as follows:

United States	$4,720
England	4,140
Germany	3,380
France	2,900
Austria-Hungary	2,750
Russia	2,020

After saying that these valuations probably err on the side of underestimation, Professor Bogart extends their application by affixing the French valuation to Belgium and the Russian valuation to Italy and the minor belligerents. Using these valuations in conjunction with the casualty lists, he gives the following table to show the costs of the war resulting from deaths among the soldiers:

CAPITALIZED VALUE OF LOSS OF LIFE.

Known dead	9,998,771
Presumed dead	2,991,800

COUNTRY	Lives lost	Value
United States	109,740	$517,972,800
England	839,904	3,477,202,560
Germany	1,997,365	6,751,093,700
France	1,654,550	4,798,195,000
Austria-Hungary	1,132,500	3,114,375,000
Russia	4,012,064	8,104,369,280
Belgium	272,000	788,800,000
Italy	1,180,660	2,397,053,200
Serbia	757,343	1,529,832,860
Rumania	397,117	802,176,340
Greece	37,500	75,750,000
Portugal	4,100	8,282,000
Japan	301	608,020
Turkey	488,789	987,353,780
Bulgaria	106,637	215,406,740
	12,990,570	$33,568,471,280
Estimated loss resulting from deaths among civilians (the number of such deaths being supposed to equal the number of deaths in the armies)		33,568,471,280
Total valuation of lives lost		$67,136,942,560

Property Losses.—Estimating the losses of the European War growing out of the destruction of and damage to property is an exceedingly difficult task. Very few of the authorities agree upon the subject. Professor Bogart estimates the total property losses at $36,760,000,000, placing the losses on land at $29,960,000,000 and the maritime losses at $6,800,000,000. The vessels sunk, totaling 15,398,392 gross tons, represent a loss of $3,000,000,000 and the cargoes sunk with the vessels a loss of $3,800,000,000. The land losses are divided among the different countries as follows:

PROPERTY LOSSES ON LAND.

Belgium	$7,000,000,000
France	10,000,000,000
Russia	1,250,000,000
Poland	1,500,000,000
Serbia, Albania and Montenegro	2,000,000,000
East Prussia, Austria and Ukraine	1,000,000,000
Italy	2,710,000,000
Rumania	1,000,000,000
British Empire	1,750,000,000
Germany	1,750,000,000
Total	$29,960,000,000

The following table compiled by Professor Bogart from various sources shows the gross tonnage of sea-going merchant vessels lost between 1 Aug. 1914 and 11 Nov. 1918:

GROSS TONNAGE OF SEAGOING MERCHANT VESSELS LOST.

COUNTRY OF REGISTRY	Enemy action	Marine risk
United States	394,658	430,759
Great Britain	7,756,659	1,143,000
Norway	1,177,001	
Italy	846,333	
France	888,783	
Denmark	240,860	
Sweden	200,829	
Greece	345,516	
Russia	182,933	
Holland	203,190	
Spain	167,865	710,285
Portugal	93,136	
Belgium	83,819	
Japan	120,176	
Brazil	25,464	
Argentina	4,275	
Uruguay	6,027	
Peru	1,419	
Rumania	3,973	
Persia	758	
Allies and neutrals	12,743,674	2,284,044
Germany	187,340	86,265
Austria	15,166	20,433
Turkey	61,470	.....
Total all countries	13,007,650	2,390,742
Grand total of all sinkings		15,398,392

Loss in Production.—One of the big indirect costs of the war was the loss in production growing out of the withdrawal of millions of men from commercial pursuits for service in the armies and navies. In 1917 there were 38,000,000 men under arms. Professor Bogart believes that an average of 20,000,000 served in the armed forces during each of the four and a half years of the war. Ascribing to these men an average earning capacity of $500 a year, he estimates the loss in production resulting from their withdrawal from civil pursuits at $45,000,000,000.

War Relief Costs.—The relief work made necessary by the war is estimated to have cost

$1,000,000,000, all of which was raised by voluntary subscriptions. Statistics are available only for the English-speaking nations. The expenditures of the United States far exceeded those of all other countries. Canada, considering her population, made exceedingly liberal contributions. England also spent large sums for war relief, as did each of her various colonies in addition to Canada.

United States.— The contributions of the United States toward war relief totaled $625,015,028 and were distributed through the various organizations as follows:

AMERICAN WAR RELIEF EXPENDITURES.

American Red Cross	$250,000,000
Young Men's Christian Association	55,000,000
Young Women's Christian Association	5,000,000
Knights of Columbus	11,249,529
Jewish Welfare Board	20,000,000
American Library Association	1,014,076
War Camp Community Service	15,000,000
Salvation Army	2,485,000
United drive of 1918	203,179,038
Rockefeller Foundation	3,087,385
Belgian relief (private contributions)	9,000,000
Other contributions (estimated)	50,000,000
Total	$625,015,028

According to Professor Bogart the actual expenditures of the Rockefeller Foundation totaled $22,444,814, but of this amount $8,000,000 was contributed to the American Red Cross and appears in its figures. About $4,000,000 was contributed to different philanthropies and $5,100,000 to the United War Work Fund.

In addition to the expenditures mentioned above, Congress appropriated for the relief of starving Europeans $100,000,000, only $11,250,000 of which, however, was disbursed for free charity. The remainder, according to the report of Mr. Herbert C. Hoover, head of the American Relief Administration, was loaned to various European governments, each of which executed notes for the amount loaned it. These notes have been turned over to the United States Treasury. The loans were as follows:

LOANS BY AMERICAN RELIEF ASSOCIATION.

Poland	$57,000,000
Czecho-Slovakia	6,750,000
Armenia	10,000,000
Russia	5,000,000
Esthonia	2,300,000
Letvia	3,000,000
Lithuania	700,000
Finland	4,000,000
Total	$88,750,000

Great Britain and Colonies.— The contributions of Great Britain and her colonies to war relief totaled, according to available statistics, $249,047,000, as follows:

UNITED KINGDOM WAR RELIEF EXPENDITURES.

England (Red Cross fund)	$72,112,000
Prince of Wales relief fund	15,000,000
	$87,112,000
Canada	91,750,000
New Zealand	17,585,000
Australia	36,000,000
South Africa	10,000,000
Newfoundland	3,000,000
India	3,600,000
Total	$249,047,000

While, as stated above, no figures for other countries are available, it is believed that their expenditures, coupled with certain unreported expenditures of Great Britain, were sufficient to bring the total costs of war relief up to the estimated figure of $1,000,000,000.

Cost of War to Neutral Nations.—According to Professor Bogart's estimate, the war cost the neutral nations $1,750,000,000. This represents the sums expended by them in guarding their frontiers and otherwise maintaining their neutrality, and are reflected in their increased public expenditures. The following table shows the cost of the war to each of the neutrals:

COST OF WAR TO NEUTRAL NATIONS.

Holland	$672,000,000
Switzerland	250,000,000
Sweden	429,800,000
Norway	130,000,000
Denmark	90,000,000
Other countries	178,200,000
Total	$1,750,000,000

Conclusion.— The total costs of the war, direct and indirect, may be summarized as follows:

DIRECT AND INDIRECT COSTS OF THE WAR.

Direct costs		$186,333,637,097
Indirect costs:		
Value of human lives lost:		
Soldiers	$33,568,471,280	
Civilians	33,568,471,280	
Value of property lost:		
On land	29,960,000,000	
On sea	6,800,000,000	
Loss in production	45,000,000,000	
War relief	1,000,000,000	
Loss to neutrals	1,750,000,000	
		151,646,942,560
Grand total		$337,980,579,657

The writer acknowledges his indebtedness to Professor Bogart for much of the information in this article and for his kind permission to make free use of his 'Direct and Indirect Costs of the Great World War.'

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24. WAR CASUALTIES. The official reports and estimates of dead, wounded and missing, in the Great War of 1914–18, show that it was far the bloodiest in history, from every point of view. The battle deaths alone form the amazing total of 7,553,600, a larger number than the total of slain in all wars between 1793 and 1914, although this period included the Napoleonic wars. These figures include those dying of wounds, probably a fourth of the total. In previous wars the deaths from disease far exceeded the deaths on the battlefields, frequently as four to one, while in this war the deaths from disease were inconsiderable in comparison, being high only during the "flu" period in October and November 1918. The total of armed men in the war being about 56,000,000, of whom probably 30,000,000 were actually engaged, it follows that one in four of the totals at the front perished. The losses fell most heavily on Russia, Germany, France, Great Britain and Austria, in the order named, 6,385,000 dead being credited to these five nations. The official estimates, as made by Col. Leonard P. Ayres, in his

report to the War Department of the United States, 31 May 1919, follow:

ARMIES MOBILIZED AND CASUALTIES IN THE WORLD WAR.

ENTENTE ALLIES	Total armies	Battle deaths	Wounded	Missing or prisoners	Total
Russia	11,500,000	1,700,000	3,000,000	2,000,000	6,700,000
France	7,500,000	1,385,300	2,675,000	446,300	4,506,600
Great Britain	7,500,000	900,000	2,200,000	400,000	3,500,000
Italy	5,500,000	330,000	947,000	1,393,000	2,800,000
United States	4,000,000	49,000	237,000	3,000	289,000
Serbia	700,000	125,000	100,000	228,000	550,000
Rumania	750,000	200,000	120,000	80,000	400,000
Belgium	267,000	102,000	60,000	10,000	110,000
Japan	800,000	300	907	3	1,210
Greece	230,000	7,000	40,000	40,000	87,000
Portugal	100,000	2,000	15,000	200	17,200
Montenegro	50,000	3,000	10,000	7,000	20,000
Total	38,897,000	4,803,600	9,404,907	4,607,503	18,981,010
CENTRAL POWERS					
Germany	10,000,000	1,600,000	3,683,000	770,000	6,053,000
Austria-Hungary	6,500,000	800,000	3,200,000	1,211,000	5,211,000
Turkey	1,600,000	250,000	500,000	130,000	880,000
Bulgaria	400,000	100,000	150,000	11,000	261,000
Total	17,500,000	2,750,000	7,533,000	2,122,000	12,405,000
Grand total	56,397,000	7,553,600	16,937,907	6,729,000	31,386,010

Later reports have constantly added to these figures. The totals computed by the United States War Department in January 1920 show the losses to the American army and the Marine Corps on all fronts as follows:

Killed in action	35,585
Died of wounds	14,742
Died of disease	58,073
Died of accidents and other causes	8,092
Total dead	116,492
Total wounded	230,074
Total casualties	346,566

A review of the casualty lists collected during the war, published by a Majority Socialist, in January 1920, shows that the German army lost in killed 1,718,246 men, including 62,693 officers; in wounded 4,234,000 men, including 116,015 officers; in prisoners or missing 1,073,619 men, including 23,104 officers. The total losses of the army, therefore, amounted to 7,025,972 men.

The losses of the navy are estimated at 78,342, including 24,112 killed and 29,830 wounded. Germany's army casualties have hitherto been estimated at 1,600,000.

Appalling as are the above totals they do not show the entire mortality. It should be remembered that at least 100,000 civilians among the Allies perished through brutality in Belgium and Northern France, U-boat warfare and bombing excursions. The massacres of the Armenians, Syrians, Jews and Greeks by the Turks were probably close to 1,000,000, and a moderate estimate of deaths among civilians in war areas from influenza, pneumonia, starvation and exposure is 4,000,000; or at least 5,000,000 deaths, a grand total of 12,618,000 deaths chargeable to the Great War.

The principal reason why American losses were so comparatively light is that they were engaged in heavy fighting only 200 days. The American losses never reached 500 a week until the third week in July 1918 at Chateau-Thierry; in the following three weeks they were 2,239, 2,362 and 2,232, respectively. Thereafter they fell to about 1,000 per week until October, when the Meuse-Argonne struggle brought them up to 6,589, 6,019 and 5,151 per week. During the remaining month of hard fighting they fell to about 2,500 a week. In percentages the American infantry and machine-gun men suffered most heavily, the air service next, followed by the tank, engineer and artillery corps.

AMERICAN WAR CASUALTIES BY STATES.

State	Casualties	Dead
New York	40,222	9,196
Pennsylvania	35,042	7,898
Illinois	18,264	4,260
Ohio	16,007	4,082
Massachusetts	13,505	2,955
Missouri	10,385	2,562
Michigan	10,369	2,751
New Jersey	10,166	2,367
Texas	10,133	2,722
Wisconsin	9,813	2,649
Minnesota	7,323	2,133
Iowa	7,311	2,161
California	6,650	1,747
Connecticut	6,625	1,265
Oklahoma	6,358	1,471
Tennessee	6,190	1,836
Virginia	6,130	1,635
North Carolina	5,799	1,610
Indiana	5,766	1,510
Kentucky	5,380	1,436
Kansas	5,182	1,270
Alabama	5,160	1,251
Georgia	4,425	1,530
West Virginia	4,018	1,063
South Carolina	3,919	1,138
Maryland	3,812	975
Montana	3,443	934
Washington	3,070	877
Nebraska	3,041	855
Arkansas	2,658	883
North Dakota	2,560	700
Mississippi	2,303	904
Maine	2,090	518
Louisiana	2,160	823
South Dakota	1,867	554
Colorado	1,759	537
Oregon	1,577	512
Rhode Island	1,562	355
New Hampshire	1,535	358
Idaho	1,351	409
Florida	1,171	467
Vermont	1,170	300
Utah	1,006	302
New Mexico	860	228
District of Columbia	773	202
Wyoming	676	233
Arizona	557	150
Delaware	303	87
Nevada	250	71
Alaska	15	6
Hawaii	13	4
Porto Rico	11	1
Philippine Islands	7	3
Canal Zone	3	2

The loss by disease among the American Expeditionary Forces was about 27,000, but there were also 35,500 deaths in the home army during the war period, so that the total number of deaths in the army from the declaration of war to 1 May 1919 was 112,432, or including the navy, 122,500. For 86.3 per cent of these deaths, the epidemic popularly known as the "flu" was responsible. The physicians generally credited these to "influenza pneumonia." Most of these deaths occurred between 14 Sept. and 8 Nov. 1918 and the number of soldiers and sailors stricken with the disease during that period was 370,000. Of these cases more than 11 per cent were fatal. Notwithstanding this calamity, the disease record of the American troops was better than ever before when in combat. The best comparison is afforded by the Civil War, in which 65 per cent of the 360,000 deaths were from disease.

It is very difficult to draw a parallel between the casualties in the battles of the Civil War and the American casualties in the great World War. The number of slain at Gettysburg in three days was 3,067, and in the battle of the Wilderness, 2,246 perished in two days of fighting, while at Antietam, 2,108 deaths were recorded in a single day's battle. In three weeks' fighting at Meuse-Argonne the battle-deaths of Americans numbered 18,000, or a daily average of 1,000. Thus in destructiveness the Meuse-Argonne battle was the equivalent of seven Gettysburgs. At Gettysburg there were about 100,000 Union troops. More than 1,000,000 American troops participated on the Meuse, however, so the percentage loss was much lower than at Gettysburg.

Far more were probably killed, died of wounds and disease than will ever get into any record. On the other hand there is always a tendency of writers to exaggerate the figures. American newspapers about the second year of the war credited Germany with having lost about twice as many men as appear at the close to have perished. These conditions render comparison of casualties of different nations and different wars very uncertain.

However, American statistics were kept with great accuracy, and it is remarkable that the statisticians in charge were able to clear up the records of over 2,500,000 troops so completely, that less than 3,000 were finally unaccounted for. Of the total American forces in the war, 2 per cent were killed or died, and for every man killed in battle seven were wounded. Five out of every six sent to the hospitals returned to duty cured. In the expeditionary forces the battle losses were twice as great as the losses from disease. The American hospital facilities were always equal to or in excess of the army's needs. War was declared with 200,000 men in the army, and the total of dead and wounded at the close was nearly 300,000.

CHARLES H. COCHRANE.

CASUALTIES COMPARED WITH OTHER WARS.

WAR		Armies	Killed	Died of wounds (Estimated)	Died of disease (Estimated)	Totals
The Great War, 1914–1918		56,000,000	7,553,600	.....	2,550,000	10,103,600
American Civil War, 1861–1865	(U.)	2,000,000	67,000	43,000	225,000	335,000
	(C.)	750,000				200,000
Franco-Prussian War, 1870–1871	(P.)	750,000	17,500	11,000	12,000	40,500
	(F.)	300,000				50,000
British-South African War	(B.)	410,000	6,000	2,000	14,000	22,000
		100,000	4,000	.....	1,000	5,000
Russo-Japanese War, 1904–1905	(J.)	650,000	48,000	11,500	27,000	86,500
	(R.)	2,000,000				120,000

25. REPATRIATION OF PRISONERS. When the great European War ended on 11 Nov. 1918, one of the big problems confronting the nations which had participated therein was that of repatriating hundreds of thousands of prisoners. At that time, according to information supplied by the statistics branch of the War Department of the United States, Germany held, exclusive of Russians for whom, it is asserted, no information is available, a total of 886,116 prisoners, as follows:

PRISONERS HELD BY GERMANY AT CLOSE OF WAR.

French	499,210
Belgian	36,829
English	171,536
Serbian	21,854
Italian	141,483
Portuguese	10,636
Japanese	98
American	4,470
Total	886,116

The German prisoners held by the United States and the Allies, exclusive of Russia, at the close of the war numbered 615,922, as follows:

GERMAN PRISONERS HELD BY THE UNITED STATES AND ALLIED POWERS AT CLOSE OF WAR.

United States in France	49,966
United States in United States	5,888
Allies, exclusive of Russia	560,065
Total	615,922

Estimates of the Russian prisoners held by Germany at the close of the war place the number at more than 1,200,000. She is supposed also to have held at that time 90,000 Rumanians. On 1 July 1919 it was estimated by the United States War Department that there were 163,308 German, Austrian and Turkish prisoners still in Siberia. Another estimate which includes Hungarians and Bulgarians, in addition to Germans, Austrians and Turks, places the number at 212,000.

Under the terms of the armistice, Germany was required immediately to begin the repatriation of the prisoners held by her, including any that might then be under trial or who had been previously convicted. Repatriation of the German prisoners held by the United States and the Allies, however, the armistice stated, should be regulated at the conclusion of the preliminaries of peace. On 8 Jan. 1920, Col. A. Gibson, of the General Staff of the United States Army, acting chief of the Statistics Branch of the War Department, asserted that practically all of the prisoners held by Germany, exclusive of Russians, had been repatriated by 30 April 1919, and that repatriation of the German prisoners held by the United States and England had been practically completed some time before his letter was written. He added that large numbers of German prisoners still were being held by France "pending final acceptance by Germany of the Peace Treaty and attendant stipulations." Germany simply by turning them loose experienced but little trouble in getting rid of all of her prisoners except the Russians. The latter, however, presented an exceedingly difficult problem. When they were dumped by Germany at the Russian frontier they soon encountered the Bolshevists who gave them their choice between death and service in the Red armies. Some joined the Reds; thousands were massacred. The situation finally became so bad that the Allies took cognizance of it. Germany was forbidden to send any more Russians to the frontier, and the United States and the Allies sent a commission to Berlin to direct the repatriation. This commission also had its troubles. It rounded up about 250,000 of the Russians and placed them in concentration camps in East Prussia, but the Reds balked practically every attempt to get them to their homes. Several thousand were eventually gotten through but as late as 11 Oct. 1919 it was said that there were still 150,000 Russians in Germany who could be located. Late in the fall of 1919 it was stated that 50,000 of the Rumanians who were supposed to have been in Germany at the close of the war had never been accounted for. The theory was that they had perished without any records being left.

The first of the unwounded German prisoners sent home by England reached Cologne, 2 Sept. 1919. England thereafter delivered about 3,000 Germans at Cologne daily and also sent back 3,000 each week by way of Rotterdam, until repatriation had been completed. The first German prisoners held in the United States to be sent home sailed from New York on 26 Oct. 1919. There were 1,600 in the party. Of these about 1,200 had been interned in Georgia. Approximately 150 of the Germans who were interned in America applied for naturalization papers. Of these, probationary citizenship was granted to 73. On 9 Aug. 1919 the Chilean government set free the crews of the German cruiser *Dresden* and the German raider *Seeadler* who had been interned in Chile for a long period — the crew of the *Dresden* since 1915. See PRISONERS OF WAR.

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26. PSYCHOLOGY OF THE WAR. **(1) American.**— The war psychosis of all countries is declared by authorities to fall into a pattern typical of group behavior anywhere under stress or during crisis. This pattern has been clearest in the United States of America for the reasons that it was physically remote from the scene of the conflict and that its component groupings are both more specific and more fluid than those of countries with greater ethnic homogeneity and more stable economic and social castes. In August 1914, the United States of America was a country nearing the end of the first half of a liberal political administration. Events and legislation had both exhibited tendencies toward liberalism in industry and interaccommodation in society. On the surface America ethnically was held to be a "melting pot," politically and economically a land of equal opportunities. Immigrants and newcomers were declared automatically to "Americanize" and to find their status in the economic system according to their talents. The tradition and foreign policy of the land had been republican and pacific. Life had on the whole been secure from famine within and assault from without. Individuals and groups, consequently, were preoccupied with the fate of their own precarious cultural, vocational, political and religious organizations. They were patriotic when they thought of it, but nothing had arisen to make them think of it often. Labor unions, financial and industrial corporations, ethnic and religious societies, political parties and such, absorbed their attention, held their active allegiance and involved them in reciprocal conflicts. Beneath the unity imposed by the "herd-dogmas" of "melting pot" and "democracy" there was the strain of unconscious ethnic antipathies and conscious economic rivalries, pressing for free expression and inhibited by the "herd-dogma." The war supplied the liberating opportunities. During its first period in Europe the inhabitants of the United States were in the position of spectators. They took sides according to their European affiliations, their intellectual and moral interests, their economic or political advantage. Thus, New England and the Atlantic Coast line generally sympathized with Old England and her allies; the Middle West sympathized with Central Europe; so did groups of intellectuals, college professors and such, who had studied in Germany; Socialists again denounced both sides, regardless of extraction; and Republicans and Democrats took attitudes determined entirely by their relations to the policy of the administration. The administration, on the other hand, demanded neutrality even "in deed and thought." Responsible for the whole country, it could ask for nothing less, and for nothing more impossible. It was subjected, therefore, to accusations of the partisan groups of both sides — "pro-German," according to one; "pro-English" to another, and "capitalist" to a third.

These accusations accompanied activities which turned "Americanism" — i.e., the interest of the totality of the inhabitants of the country — into a social and political issue. The President made his famous speech on the "hyphenated American." At the same time American financiers who had been making extensive loans to the Entente grew somewhat disquieted by the character of the campaign, and the effects of the enormous profits made by American manufacturers and others on the sale of war

materials to the Entente showed themselves in a strong desire to maintain the source of supply and in a corresponding antagonism to anything that might hurt it. Wages rose, moreover, and the demand for labor grew. And all the while German agents were plotting against the property of American citizens and the neutrality of the American government. These events together served to alter the pattern of the American group-arrangement. They brought into being a new and forceful alignment deriving from the attitude of groups toward the parties at war. The change became quite manifest in 1916 when Mr. Wilson was re-elected on the slogan "he kept us out of war" on a vote contrary to all the precedents of American presidential elections, the result remaining in doubt until the very last returns were in.

The program of neutrality was, however, itself being destroyed by events. There appeared on the field interested military propaganda organizations, like the National Security League, the Navy League and the American Defense Society. German naval policy came smack against international law and American interests. To continue keeping America out of war it became necessary to get speedy peace — from the "peace without victory" to all the other varieties. When war finally was declared, it was declared on two grounds, to avenge the wrongs suffered by the United States at the hands of Germany and "to keep the world safe for democracy." The Council of National Defense, the Espionage Law, the Draft Law, the War Industries Board, the War Labor Policies Board, the Food Administration, the Fuel Administration, the Bureau of Public Information, came into rapid existence. Loyalty leagues and other spy-hunting organizations appeared all over the country, headed usually by "business" men. The interest of all America had at last been fused with the particular interest of one group of the belligerents and one social class.

This identification does not appear to have been the result of the active will of the great mass of American citizens. The malfeasance of the Germans appears to have had less influence in creating it than the effective will of two organized and interested minorities, business men and intellectuals. The mass required to be argued, sung and whipped into enthusiasm. Instruments of propaganda for this purpose were both official and voluntary, and they used all the methods known to the advertising agent and a good many new ones. They played upon fear, vanity, the blood-lust, greed and hatred, certainly not less than on the nobler emotions. But the new waves of feeling thus aroused and integrated acquired a reliable base only with the application of the draft laws, the operations of the food and fuel regulations and the reports of the casualties. With these a definite change in the American mood was to be observed — an intensity of sentiment in which all the emotional elements mentioned above were active. This sentiment was still in *crescendo* when the armistice came. For over a year feeling was far from normal. It was, however, without the object on which, under a state of war, it would have spent itself. Its manifestations, consequently, are taking the form of what is called "unrest" for one group, and "law and order" for another.

"War psychology" began to develop with the appearance of "Americanism" as an issue. Up to that time, social life in the United States had been determined by the usual motives of the peace-time routine. Its overruling psychological factors are the instincts involved in the individual's activities of self-preservation and self-expression. These instincts operate the functions of food-getting, mating, self-assertion, play, and so on. Their inhibition and repression involve unpleasantness, pain, anger, fear, and the other emotions of repression and disintegration. The milieu in which they work is a society or herd whose solidarity is expressed in a like-mindedness established and maintained upon either or both of two conditions — the internal one of a common specific heredity and common social organization and tradition from infancy, and the external one of a natural and man-made environment imposing common vocational, religious, political, military or other purposes. This like-mindedness has been attributed in recent literature to an "instinct of the herd." It establishes and defines the background and limitations against which and within which the competitive individualities of the members of the group operate. Its force varies inversely with its extent and it is most overruling in the family and the tribe. It is a distinguishing mark of primitive societies in which the individual's struggle for survival and expression is limited to any one type of association under the conditions of conflict which are normal to such groups; his virtue or his wickedness becomes that of the group, and his responsibility the group's responsibility: blood-guilt and blood-vengeance are the social inheritances passed on by the generations. The state of war between one group and another compels and reinforces the state of harmony and solidarity within each group. When the pressure of such a state relaxes, the individualities within each group expand. In times of peace, no matter what the society, individualism is maximal.

The maximum, nevertheless, is not an absolute one. Individuality is required to conform to the "herd-dogma" which is the overt expression of like-mindedness, and keeps the irreducible rivalries of individuals within the group in a state of perpetual compromise and repression — sex, prestige and power conflicts never get quite fought out to a decision. An indefinite number of impulses, instincts and appetites may be added to these three, to fill out the psychological picture of a normal peace-time society. Such a society was the United States in 1914. The groupings in which individuals formed themselves were primarily ethnic and economic, and these to a large extent reinforced each other. The prestige and position of the British strain was opposed and threatened by the growing importance and self-assertion of other strains, and reinforced again by the law of imitation whereby "lower" social types get assimilated to the standard of the "higher" ones. The war in Europe served to release the emotional and ideational systems involved in the situation. Groups that could not fight each other as Americans, might as pro-English and pro-German. The war of words that was carried on between 1914 and 1917 in-

tensified the oppugnances of each group and accelerated the emotional fission within the land. As feeling grew, two processes became apparent. On the one hand, each opposing group belittled the other; on the other, it converted the enemy into an all-powerful monster of evil. The chief subjects of the processes were the Germans and the English: the other peoples in the war being mere background, of significance only in their relation to the protagonists, who again symbolized the chief division in America. There was no evil too improbable or impossible for either to believe of the other. Since the country's official neutrality functioned as an inhibition upon the release of the emotional tensions involved in this condition, the government, particularly the President, became the object of ill-feeling. This feeling was, among the pro-English, however, not primarily a response to the nation's neutrality; it was a resentment against the liberal domestic policies which the President had sponsored and a wish to continue and to increase the gains which the war had brought. Not being expressible directly, it found its release indirectly through a denunciation of neutrality.

American entry into the war shut off this channel of expression. In recompense, however, it released and gratified all the other lusts, impulses, appetites and resentments which in normal times are held in leash within the group. It released them by appearing to give them an objective beyond the group, in its enemy: toward the Germans no attitude and no expression could be too immoral or too inhuman. It gratified them by enabling the business classes and associations involved to identify the interests of their own opponents within the group with the interests of the whole group's enemy outside. Thus, notably, although the President's popularity became enormous and the solidarity of the country unprecedented, the opposition of the business classes grew intenser and took the form of a criticism of the conduct of the war, particularly with reference to the administration's attitude toward labor. Violence began to appear in many forms, from pacifist and radical baiting to race riots, and a patriotic terrorism, engineered and led by members of the business class, became manifest part of the war psychosis. Examples are the Mooney case, the Bisbee outrage, the I.W.W. prosecutions, the Liberty Loan intimidations in Wisconsin and elsewhere, the assault on the Non-Partisan League in Minnesota. Incitements to violence became recurrent in the newspapers and were later chronic. Any appearance of free spirit or independent judgment in industry or politics was declared "pro-German" and proscribed. Particularly did the Russian revolution and sympathy with it come in for hysterical denunciation. The underlying cause of this phenomenon was the functioning of the War Labor Policies Board upon the basis of collective bargaining and of a wage-scale determined by the standard of living. The repression of pacifists, liberals and other minorities, the persecution of the merely foreign, the suspension of the civil liberties of the common man, of which much is usually made in war psychology were only incidental to this more basic transference of the combative and aggressive emotions.

This was possible because the "herd-instinct" usually acting as a check upon the various conflicting personal and group wishes, impulses and feelings had under the conditions of war released them, and had integrated them into its own processes. Inasmuch as the execution of the national purpose fell naturally into the hands of the business class, the "herd-dogma" was identified with the interests and preferences of this class. "Americanism" thus acquired a meaning not at all intended by the President nor implicated in the institutions and principles of American polity. The meaning was reinforced by two novel phenomena in the conduct of war: one was the necessary integration of the industrial basis of modern war, the other was propaganda usually called "public information." From April 1917 to November 1919 and longer, the feeling evoked by these conditions and agencies exhibits a steady acceleration in mass and intensity. The armistice came long before the height of this movement had been reached, long before the "herd-feeling" had been used up by enchannelment in the standardized types of behavior apparent in the warring countries of Europe, long before war-weariness could set in. The armistice abolished the foe whose existence had been the initiating occasion of war-behavior and the war-psychosis. The country became like a charged wire with a loose end; a menace to almost anything that might draw its feeling. The premature removal of the external occasion and the lack of a new one meant a reversion of this feeling inward, bringing "unrest" and "law and order" into play. Bolshevism replaced Germany as an object of hatred, and was used as a synonym for any attitude other than one favoring the perpetuation of the dominance of the business class. "Americanism" became synonymous with the suppression of labor activities, liberalism in politics, liberalism of any kind. All these were extruded from the body politic by the epithet "foreign" or by being attributed to "foreign" agitators.

The same relation of emotion and condition obtained among the drafted men returning to civilian life. By propaganda and training their minds had been set to military activity covering a larger period than was actually required of them. While at the same time, the discipline of military life had repressed all the appetitions which the purpose of that life aroused. They came back, thus, ripe for violence. Organized in the American Legion, and led by persons of the business class, they also seek objects by which the emotional tension might be released. They function violently against anything "foreign" or "Bolshevist."

Because of the discrepancy between the intensity of the war feeling and the length of the war the whole country is, in fact, in a condition of intellectual confusion and emotional instability. The war having from the point of view of the emotional change in society stopped too soon, the emotions accompanying it disintegrate on all sides the unity they had established. The pre-war rivalries are more explicit and more intense; the conflict between the economic groups is now avowed and final. This state will endure at least until the surplusage of emotion is consumed. It may endure much longer if the appropriation of "Americanism" by one class is not repudiated and common purposes of construction posited effectively enough to create a new national morale.

Broadly speaking, the same things are true for all other countries. See PSYCHIATRY and WAR.

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(2) European.— The catastrophe of 1914 and the psychic reactions to it present the student a distinctive problem. The readjustments demanded by the World War appear psychologically as contributions to the genesis of conviction. When we attempt to view the World War as occasioned by psychic conditions, this implies a look below and beyond outward manifestations, to the underlying phenomena, and then to see these reflected in the convictions of men under the coercion of a violent reconstruction of their already adjusted outlooks, outlooks upon the world formed during a period of peace.

It is only by confining oneself to generalities that one can discuss group mentality and sentimental states. For though all groups doubtless possess a certain number of common characteristics, many partial differences divide them, and even various provinces possess strongly marked similarities, which distinctions, however, do not in the least preclude the existence of many common characteristics.

In former wars as in the late struggle it was not each nation's desire for national expression which made the continuance of peace impossible. It is the fact that thus far in the world's history such desire has been bound up with navalism and militarism. Any national group whose frontier bristles with engines of war is not unlike the individual with a magazine pistol ready for instant action. Both make for murder: and in their hearts, both really mean murder. This war was occasioned by too many nations with a desire for self-expression under military and naval conditions and only one planet upon which they might expand. Psychologically, war is mere instinctive action. The Great War cannot have been dependent upon the will of any one man. It was brought about by deep-seated, remote and varied causes, which had been accumulating until now when their effects emerge suddenly, as it were, into our ken. We have been surprised, and our mental peace has been taken from us by the revelations of, say, a preparedness, so far surpassing ours, that we do not see ourselves so much of a world power as we had imagined ourselves. The Great War revealed the souls of men. The leading European representatives of Western civilization — Germans, Englishmen and French — are oppressed by a paralyzing astonishment in regard to each other's real nature. They did not know each other — and yet considered themselves as members of a single ancestral stem.

Ever since the olden days, the world has been seething with suppressed but none the less destructive activities that have at last laid it low with the worst case of universal nervous prostration ever known. This state is called war. The world could not avoid war as long as it remained on the level of warfare. Ours was not a Christian world. And while the national pulpit preached Christianity, nations eyed each other, ready for blood. The powers that move one mass of humanity against its brethren are deep and subtle; so deep and subtle that we are constantly substituting surface and relatively unimportant causes for the real ones.

One of the plainest lessons taught by history, and one of those substantially verified by the late conflict, is that nations are not ruled by realities, but by more or less illusory ideas which they have, intellectually, misformed of realities. The truth about an historical event is seldom, very seldom, known at the time of its occurrence.

Wars are not the expression of reason but of instinct. And there is in consequence no such thing as "culture" or "civilization" on the level of reasonless instinct. The instinct of partisanship which on one side is devotion and loyalty, on the other side hate and bigotry; the instinct of dominance which makes the strong love to assert their power over rivals, and the instinct of pugnacity urge men to fight and nations to war. Most great wars are fratricidal. The worst wars and the worst misunderstandings, prejudices and hatreds bred by war are between strong nations closely akin. War has the zest of action at terrific intensity. It is the very intoxication of instinctive life and is as tempting as strong drink.

As a result of the war the attitude of the human mind toward many things has changed radically. The relations of life and death — life's value and death's meaning — are considered to-day much as primitive men considered them. The world as a whole felt a sense of disappointment as the war progressed. Our disappointment was not, however, justified, for the reason that it was based on the destruction of an illusion. Before the war began, illusions as to the nations soon to be at war, commended themselves to the world at large because an illusion saves us pain and allows us to enjoy pleasure which a true appreciation of our position would tend to destroy. The sense of disappointment brought about by the war came into existence with the shock which followed when our illusions collided with reality — the reality, namely, that civilized nations are still capable of reverting to what we have been wont to regard as savagery.

Many phases of the mystical spirit glided into our ken as the war progressed. We beheld the odd behavior of sovereigns appealing to their gods and rendering them thanks for victories put down to their credit. A tsar held up an ikon to be gazed at by his kneeling squadrons, as they worshipped. A kaiser made speeches and issued proclamations about the motives and purposes of the god of the Fatherland and of his royal house. And even George V we find to have retained some of his sacred war functions. He vowed not to touch a drop of liquor during the war; and this vow is an act of religion.

A few considerations will help to state the relations which such behavior bears to piety. Piety is unconcerned about human relations in themselves But, as the sense of union with deity is immensurably strengthened by the sense

of community in worship, the pious are in fact concerned about the body of the faithful as well. Consider Christianity. It arose lonely in a lonely land. It developed the dogma of the "brotherhood" of man, quite as mystical a dogma as "nationality" or any other principle of kinship or union. But after two or three centuries, when Christianity was adopted as a "*state*" religion, the Christian's gregarious instinct was satisfied in another way. His sense of participation with mankind became superfluous. It began to atrophy. One with his "*state-church*," the Christian rose up against the "heretic" and the "infidel"— his pristine brethren! Warfare with the enemies of the Christian Church but intensified his sense of the participation with the Father of Mankind.

With the Crusades came the movements historians call "nationalistic"— a series of movements which subordinates church to state, the faithful to the patriotic; a movement, in short, which made of God at most a *National* hero. A nation's god grows with a nation. "National" groups came into existence with common triumphs and common sufferings — in a word, by sharing a common experience. A nation's god is thus the synthetic personality of a whole people, taken from its beginning to its end. This god is thus the attribute of a specific nationality; and thus a people is the body of a god. With such information one can easily enough understand the anachronism in the behavior of the aforementioned sovereigns.

"This war is queer," wrote Wells the English sociologist on his return from the front. All have remarked the silence of many returned men who experienced some of the most awful things witnessed in the war. In France one beheld an impressionable, volatile and undisciplined nation suddenly transformed into a resolute and tenacious body of men, exposed for months together to an underground existence in cruel trenches and to the constant menace of an obscure and awful death. From English shores men saw boys go off blithely to experience the storm for themselves; these came back sobered, which is intelligible; and *silent*, which is unintelligible. That they and their French and Belgian brethren spoke modestly of their deeds was not unnatural. But that they should be so strangely reticent in speaking of the grim total fact and of their minor reactions was unnatural. They had been willing to communicate a few items of their adventures; but of their total experience they would not and could not speak.

Wells saw them in the trenches; and found them "weary, rather sullen, *inturned*," with shoulders drooped. Their very outline was, as it were, a mark of interrogation: on their faces they wore the expression of puzzled men — thoughtful. How strangely they inhibited thought and speech, these men of the Front! Puzzled, thoughtful, speculative *inturned:* a mind as yet unable to grapple with the dominance of an *ineffable* fact. Such men feel themselves conscious of some new spiritual fact.

When one meets one of these returned men, mud, shrapnel, rats, gas and the like will no doubt figure prominently in the story he tells. Beyond that — he can only intimate by silence that life at the Front has qualities which may not be told. Such an one is a transformed personality: he has lost his original self. William James notes "ineffability" as the handiest of marks to classify a state of mind, which as mystical, is negative. The subject of it immediately says that it defies expression; no adequate report of its contents can be communicated in words. It follows from all this that its quality must be directly experienced to be understood. It cannot be imparted; not transferred to others. And thus we are to explain the strange thoughtful silence of returned men by supposing that a touch of the "*ineffable*" seemed to have entered into the fabric of their lives with their experience at the Front, however brief, or humble, that experience may have been.

In the trenches the instinct of emulation, so closely allied to imitation, found ample expression. In its earliest forms this instinct is closely allied to envy and jealousy. Among the other things that found expression was ardent race hatred; the instinct to revenge; the megalomania that "it is all right for us to fight but never right for our enemy to fight"; and with all the instinct of excitement, to adventure, and to insatiable achievement, were not wanting in so far as their expression was concerned. Vengeance is one of the most permanent of all feelings; but the most remarkable thing about its expression on all sides during the war was the extent to which vengeance passed for justice.

The proximity of hostile armies was a powerful spur to invention; attention being of course chiefly turned to the production of the means of offense and defense. Success in war depended upon the mechanical superiority as well as the morale of the armies — indeed, it counted far more upon mechanism than upon any kind of personal prowess. Hence the many new "gases" and "aeroplanes" and long-range "cannon"; as well as the manifold ways of concealing one's position in relation to one's enemy.

Collective opinion has a great deal of strength, which is seldom spontaneous, however, for the crowd is really an amorphous organism that is incapable of acting unless it has a leader, who influences it by affirmation, repetition, prestige and contagion. Now Germany was a nation with a military rather than a civic spirit. We are told of policies of "Schrecklichkeit" and of "Hymn of Hate," and wonder whether these are symptoms of madness or the contrary. The facts as to the psychosis of the composer of this "Hymn" are not forthcoming. But what appears to be the truth is this, rather that the power of song was fully realized by the military powers of Germany, than that Germans hated — actually hated — England. We are in America, all familiar with the political device in which a few venture an assertion and urge it upon the crowd with unobserved compulsion, proclaiming as already existent an agreement in feeling which they are only seeking to inoculate. We believe this to be the meaning of the existence of the "Hymn of Hate."

"Der Tag" was no doubt the symptom of megalomania. It is often said that the Germans were "firmly convinced" that the conflict was due to a conspiracy secretly plotted by England. How far this is true a census would tell better than a guess. Fear, to be sure, is the in-

stinctive stamp of a coward, and a coward that fears to-day may fight to-morrow because continued fear is the worse of two evils. When fear is once turned loose it is cruel beyond measure. When the great poet Schiller was analyzing the human heart to find the most ungovernable, the most «don't care» emotion of man, he pointed out terror as that emotion. Terror is fear gone mad. With these thoughts in mind, it is not impossible that the reiteration of German politicians had «convinced» the German mind of something. Was that something to make them fight the better? From such a mood of fear arose the majority resolutions of 19 July 1917, on peace, without annexations or indemnities, and the peace offer, with its fateful consequence, of 5 Oct. 1918.

As the war progressed we saw the morale of the German nation torn asunder by different political parties — no morale could endure so much disunity. The politician has succeeded also in sowing a mistrust of a League of Nations «invented by Germany's enemies to vanquish the Germans by votes.» When active hostilities ceased, influence from beyond its borders acquired terrifying powers; and as one of its manifestations the world has seen a transformation of the Germanic form of government.

This brings us to the Englishman, or rather to the Entente. At the outset we see Entente diplomats operating with concepts of an older period. They appeared to favor, within certain undefined limits, the military power to seize conferred by the right to keep; and they operated with «annexations,» «strategic frontiers,» «political guarantees,» «economic barriers,» «Constantinople,» «German colonies,» a «province of Prussia,» and many more ideas. Later they appeared with the more respectable principle of «nationality,» and the «rights» of the weaker peoples to rough hew their own destinies without molestation from the outside. But in consequence of the special strategic, imperialistic and sentimental aspirations of individual units of the coalition, the principle of «nationality» had to be so twisted, limited, and interpreted in the final considerations of the Big Four, before it received adhesion of all, that when it emerged from this process the idea of nationality was of course a curious hybrid.

In 1871 the world beheld England, Italy, Austria and Russia occupied with internal problems, as well as the sultan's dominions in process of dissolution. Then followed the birth of new nations,— Greece, Albania, Montenegro, Serbia, Bulgaria and Rumania,— from the ruins of the Turkish Empire. From all this one can readily understand why the concept of «nationality» needed modification. For with the birth of these nations arose also many hopes, and many fears, as well as jealousies, even among greater continental powers.

No one could have foreseen the marvelous efflorescence of qualities in men who come from the most widely sundered classes of society and ethnic stations. All nations possess an aggregate of inherited feelings which are determinative of their mental orientation, causing individuals of unlike ancestral equilibria to take different views of the same questions, and which occasion those inextinguishable race-hatreds that were among the chief causes of the European War.

It is a general psychological rule that internal dissension and civil dangers cease as foreign danger begins to threaten. England and Ireland are thus seen united in the hour of danger. The sight of Belgium's burning cities did not make her hesitate a moment to defend her «honor.» Here the Belgian resembles the Frenchman. Invariably when an idea becomes too ethereally abstract (as «honor») the Englishman begins to regard it as humor. In his most exalted moments during the war the Frenchman seemed to the Englishman like an idealistic ghost. An Englishman thinks in quantities; only an American outdoes him in this respect. We see him demand all ships; let him dictate all news, and allow him to control all credit. Here we behold the English world-idea. During the war the English mind developed for the first time, and without insularity, an extension of national consciousness into one of imperial magnitude. A new experience brought the islander to feel a deepened intimacy with the dominions overseas, a feeling reflected in his daily press, in the pulpit, and on the platform, in conversation of philosophers and working men. When the war began there was an insular, national consciousness, now there is an imperial consciousness in the Briton.

The experience of rationing has begotten for England a respect for the idea of equality over that formerly exercised by inequality in the same country. Many other transformations in the English habit of thought could be mentioned; space forbids.

It could be shown that Italy entered the war through fear, as did China. Japan's policy is perhaps the most consistent expression of an intelligible purpose of any nation who participated in the war; it may be formulated as the consideration of her own influence in the Far Eastern waters to the exclusion of all others.

Ever since Peter the Great's time Russia had been consciously reaching forth for an outlet upon the warmer waters of the sea. A Russian traces his religion and very largely his civilization to the Christian Empire of Constantinople (Byzantium), and this was destroyed by the Turks in 1453.

No thoughtful person underestimates the great moral powers latent in the Russian people. The Slavic world, whether north or south, is one full of deep melancholy beauty, of devoted loyalty, of religious democracy, of sincere idealism. The harshness of its upper classes under the autocratic régime and widespread corruption of its upper classes are unimportant compared with the sterling virtues of the Russian people of Slavic descent.

Even a German soul is full of sunshine. The Russian at its best reveals something sombre, gloomy, oppressive. The aspiration of a Russian aims at democracy, but history reveals that this aim brings high and low to one level, by lowering the better, and thus bringing all to a state of simple humanity. The result is lack of education, complete submission to the church, and a pathetic mixture of ignorance and superstition.

Such is the soul which the Russian exposed to the awful experiences of the Front. No one can wonder that in its various transformations the horrible state of his land as it now exists has

resulted. For is it not a state expressing child-like ignorance of the un-Paradisiacal innocence of the empirical man?

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27. WAR AND ITS RELATION TO WORLD COMMERCE, The. To discuss the relation of the World War to world commerce implies (1) a consideration of political and commercial conditions at the beginning of the war; (2) the political, commercial and industrial conditions developed during the war; (3) the conditions at its close, and (4) the probable effect of the many changes which it made in the political, industrial, economic and commercial power of the areas which ordinarily produce or participate in commerce.

International commerce of the world at the beginning of the war consisted of annual exchange between nations of about $20,000,0000,000 worth of merchandise, but as the value of merchandise was counted twice, once when exported from the country of production and again when imported into the country of consumption, we are accustomed to say that the pre-war commerce was about $40,000,000,000 per annum. About one-third of this, speaking in very round terms, was foodstuffs, another third was manufacturing material and another third was manufactures. Most of the food and manufacturing material entering international trade was produced in the Americas and Australasia and was taken by Europe and paid for in her chief product for exportation, manufactures, to which she added the services of her merchant marine and the earnings of her invested capital in the producing countries. Of the $7,000,000,000 of manufactures entering international trade in 1913 about $6,000,000,000 was supplied by Europe and $1,000,000,000 by the United States, and they took manufacturing materials and foodstuffs in exchange. Much of this manufacturing material and food came from the Americas and Australasia, though Russia supplied a part of the food, and tropical Asia and Africa a part of the manufacturing material.

Of the manufactures which were exchanged for the food and raw material a very large proportion was produced in those European countries which actively participated in the war, and they were large purchasers of manufacturing material and food. Much of their power of production in manufactures for export was suspended, while in the case of the other great manufacturers, the United States, production and exportation were stimulated. The European manufacturers thus lost to a considerable degree their hold upon the world's markets and the United States gained largely in those areas formerly supplied by Europe, our own exportation of manufactures in the year following the close of the war having been over $3,000,000,000, against $1,000,000,000 in the year preceding the war.

Great Britain, France, Belgium, Italy, Germany and Austria-Hungary supplied about $6,000,000,000 worth of manufactures for international trade prior to the war, and while they bought a part of their food from Russia, the bulk of their purchases of this character came from the parts of the world in which there was during the war no suspension of producing power but rather an increase in production, and, therefore, of purchasing power. With the inflation of world currency and increased prices which followed, the nominal value of commerce increased. The belligerent countries of Europe necessarily increased their imports, buying largely on credit and with money borrowed from their own people, and the valuation of world commerce, measured in the high prices which followed world inflation, was in the closing years of the war over $60,000,000,000, as against $40,000,000,000 in 1913, despite the fact that Germany, Austria-Hungary, Turkey, Bulgaria, Belgium and Russia were cut off from participation in international trade.

The effect of the war upon world commerce in the years to follow will depend chiefly upon the recuperative power in production, and, therefore in consumption, of the areas in which the war was waged. The other parts of the world find themselves with increased producing power, higher prices for their products and, therefore, higher purchasing power, and while they must pay to labor a higher wage for its services and to shipping a higher charge for transportation, their exchanges with each other will be larger, at least when measured in the inflated currency, and their power to supply food and raw material to manufacturing Europe will exceed that of the pre-war period. The proper relation of wages to the high prices which have followed the quadrupling of world currency will be slowly adjusted, the purchasing power of the masses measured in larger figures, and world interchanges, except as to the war-torn sections, will move on at a new level of stated values, for it cannot be expected that prices will materially decrease unless the inflated currency is deflated, and that will not be easy in view of the fact that the countries having this inflated currency must now demand from their people three times as much in taxes as before the war.

The chief subject to be considered in an attempt to look into the future of world commerce, as affected by the war, is the condition present and prospective of the area in which the war was waged. Practically all of Europe, except that part immediately fronting upon the Atlantic, has been radically changed in political organization, the grouping of peoples and the facilities of production, transportation, finance and, therefore, of commerce. Four great countries with an area of 10,000,000 square miles and a population of 325,000,000 have been transformed into 40 new and comparatively small political divisions, and if we include their "overseas" areas the number of new political units is 50, with an aggregate area of 11,000,000 square miles and 350,000,000 population. In Russian territory alone no less than 20 groups of people have declared themselves as new political organizations, republics in most cases, despite their inexperience in the conduct of that form of government. From Austro-Hungarian territory a half dozen new political divisions have sprung into existence. Germany, after losing 15 per cent of her European area, 10 per cent of her population, all of her colonies and an important part of her industrial resources, re-enters the industrial and economic world with a new form of government, a much depreciated currency and greatly diminished

transportation facilities, especially on the ocean. From the territory in Asia formerly administered by the Turkish government, a dozen political divisions are being created, many of them to be governed at long distance as "mandates" or colonies, protectorates and dependencies, while in others the administration will be left to the chieftains of the scattered and nomadic populations. The German colonial possessions in Africa, Asia and Oceania are also to pass under new political control and commercial influences.

Thus all of interior Europe with its great manufacturing and agricultural resources has been thrown into the melting pot, and the new political units made therefrom have been grouped chiefly upon ethnic relationship and with forms of government new to the people and to be conducted by comparatively inexperienced minds, leaving to the future the readjustment of their industrial, commercial, financial and transportation facilities. This great area of interior Europe with its 325,000,000 people was, prior to the war, an extremely important factor in world industries and commerce. Its annual production of wheat averaged 1,250,000,000 bushels or nearly one-third of the entire world crop; it produced practically all of the beet sugar of the world and thus furnished about one-half of the world's sugar supply; its coal and iron production exceeded the requirements of the local population, and its factories distributed their chemicals, textiles and iron and steel manufactures to the entire world and took in exchange food and manufacturing material of other countries. The pre-war exports of the four countries which have now been subdivided into 40 new political divisions totaled in 1913 nearly $4,000,000,000 and their combined imports exceeded $4,000,000,000, making a grand aggregate of $8,000,000,000 or one-fifth of the entire international commerce of the world; while their railways were 115,000 miles in length or one-sixth those of the entire world.

It is quite apparent that the effect of the war upon prospective world industries and commerce depends to a large extent upon the industrial, financial and commercial future of the 40 political units into which these four great areas — Russia, Germany, Austria-Hungary and Turkey — have been subdivided.

While it may be assumed that the 325,000,000 industrious people of this area who have created in the past an international trade of $8,000,000,000 are still of the same industrious disposition, it is important to consider the new grouping which has been made, in the matter of ethnic stocks, form of government, experience or otherwise as lawmakers, transportation facilities, finances, industrial power and, therefore, commercial prospects. One of the most distinguished American authorities on world political and ethnic history, Prof. Edwin A. Grosvenor, formerly professor of modern government and international law in Amherst College, and for 20 years professor of history in the Robert College, at Constantinople, discussing the new groupings of people in the area in question, says: "For the first time in human experience, an effort is being made by the victors after a great war to trace the new frontiers in accordance with the racial aspirations and affinities of the peoples involved. Because of the impossibility of defining exactly the limits of a race, many heart burnings are inevitable in the new adjustment of European boundaries. . . . The Old Order has passed away. A new Europe is in the making. Neither a year nor a generation will suffice to make it. . . . Europe, though so old, is for the greater part young and inexperienced in self-government and political duty and opportunity. The gait of more than one newly enfranchised people will resemble the uncertain walk of a just-awakened child."

Before entering upon a consideration of the 40 new political divisions created from the four great interior countries, it is not improper to give a moment to the effect of the war upon the population, area and industrial and commercial power of the Allied group.

Great Britain.— Great Britain made no attempt to gain European territory as a result of her participation in the war, but in the distribution of the overseas possessions of the defeated countries, she has added materially to the area of her "colonies, protectorates and dependencies." Immediately following the announcement that Turkey had aligned herself with the Central Powers, Great Britain on 8 Dec. 1914 declared a British protectorate over Egypt, in the government of which she had for a long time largely participated, and this new British government over Egypt was promptly recognized by the French, Russian and Belgian governments, and in at least a limited form by the United States. At the same moment attention was given by Great Britain and France to the German territories in Africa, which aggregated about 930,000 square miles with a population of approximately 11,000,000. Togo, lying on the west coast between the British colony of Gold Coast and the French colony of Dahomey, was jointly taken by the British and French troops in August 1914 and the administration divided between the governments of the British and French colonies adjacent and is now governed by a commission appointed by the Allied commanders. German Southwest Africa was promptly invaded by troops from the adjoining colony of British South Africa and was conquered in July 1915 and placed under the control of the government of the South African Union, a British colony. Kamerun, also on the west coast, between British Nigeria and French Kongo, was conquered by British and French troops in co-operation, and in February 1916 a part of its area was placed under the government of British Nigeria and the remainder under that of French Equatorial Africa. German East Africa, the most important of the German possessions in that continent, was invaded by Great Britain in the early part of the war and its conquest completed in 1918, and the Peace Conference at Paris decided that the "mandate" for its government should be held by Great Britain. The control of British East Africa and Egypt by Great Britain gives to that country a continuous stretch of British territory from the Mediterranean at the North to Cape Town at the South. In the Pacific, the German possessions of Kaiser Wilhelm Land, the Bismarck Archipelago, the German Solomon Islands and Nauru were occupied by Australian troops and the German Samoan Islands by British forces, and all remain under British military occupation. In Asia Minor, Great Britain, by her occupation of Bagdad and the

Valley of the Euphrates in the early part of 1917, obtained control over the Mesopotamia Valley with an estimated area of 143,000 square miles and a population of 2,000,000, and by her occupation of Jerusalem in the latter part of 1917 she obtained control of Palestine with an area of about 16,000 square miles and a population of approximately 500,000.

France.— France gained important additions to her territory and producing power by the return to her of the Alsace-Lorraine area and with it a permanent control of the German coal mines of the adjacent territory of the Saar Valley. Alsace-Lorraine has an area of 5,600 square miles and a population, by the 1910 census, of 1,874,000. The chief cities are Strassburg, the capital, with a population of 179,000; Mulhausen, in Alsace, 95,000, and Metz, in Lorraine, 69,000. The chief agricultural products are wheat, rye, oats and wine; the mineral products in 1913 were 21,000,000 tons of iron ore and 3,800,000 tons of coal. The cotton manufactures were considered the most important in Germany and the woolen manufactures also of considerable importance. Germany, by the Peace Treaty, cedes to France the full ownership of the coal mines of the Saar Basin, which extends from the frontier of Lorraine as far north as Saint Wendel, including on the west the Valley of the Saar as far as Saarholzbach and on the east the town of Homberg. This coal area is to be governed by a commission appointed by the League of Nations and at the end of 15 years a plebiscite is to be taken to determine the wishes of the people as to union with France or Germany or continued control by the League of Nations. France also gains in Africa about 100,000 square miles of area and about 1,500,000 people.

Italy.— The chief changes in Italian territory consist of the addition of certain territory, formerly the southwest part of Austria and including the important port of Trieste; also a fringe of islands and mainland coast on the eastern frontage of the Adriatic, formerly a part of Hungary but having a large Italian population. The details as to the area or population gained by Italy are not yet sufficiently determined to render possible an exact statement, though apparently the territory added approximately 18,000 square miles with a population of 2,000,000. Late in 1919, the former Hungarian port of Fiume, claimed by Jugo-Slavia, was occupied by a military force composed of Italians, but the Italian government stated that the action was not by its authority. Later, however, the government announced its intention to occupy the city and adjacent area, pending a settlement of permanent control by plebiscite or otherwise. The importance to Italy of the newly-added territory from Austria and Hungary lies largely in the control which it gives her of the Adriatic frontage at the head of that gulf and the fringe of islands and mainland along its eastern shore.

Belgium.— The changes in Belgian territory are extremely small and consist chiefly of the settlement in her favor of the long-pending question of the control of the town of Moresnet, a tiny territory of about one and one-half square miles on the borders of Belgium and Prussia, four miles southwest of Aix-la-Chapelle. The three townlets of Moresnet lie close to Aix-la-Chapelle, one being Prussian Moresnet, the second Belgian, and the third neutral. The last named, which has a population of some 2,800, owes its origin to the European settlement of 1815. Between 1816 and 1841 it was administered by Prussia and Belgium jointly. But since 1841 neutral Moresnet has been independent, being governed by a council of 10 members with a burgomaster at its head. The control of this disputed area now passes absolutely to Belgium.

Greece.— Greece gains a considerable area of Turkish territory in Anatolia, in Asia Minor, just across the Ægean from her eastern border, including Smyrna and the adjacent section in which there are many representatives of her own population. No definite announcement has yet been made as to the boundaries of the area which will be assigned to her or its population. Whether the territory at the head of the Ægean will be attached to Greece is not yet determined.

Rumania.— Rumania gains largely in area and population through the absorption of the eastern section of Hungary, which was occupied by people speaking the Rumanian language, including the important section of Hungary known as Transylvania, also the Russian territory of Bessarabia on the Black Sea, also a considerable area of interior Hungary. No definite figures can be given as to her increase in either area or population, though from latest indications the present area of Rumania is about double that prior to the war, and absorbed chiefly from Hungary.

Japan.— Japan took forcible possession in the early part of the war of the Marshall, Ladrone and Caroline Islands and the German colony of Kiao-chau, on the coast of China, and still retains control thereof. The peace treaty gives her a "mandate" over the islands in question and also passes to her all rights regarding railways, mines and cables which had been granted by China to Germany. This, while protested by the Chinese government, will if it becomes effective give to Japan extremely valuable exclusive privileges in the important Chinese province of Shantung and probably in other provinces of China.

The losses by the Central Powers may be outlined as follows:

Germany.— Germany's losses on the West, as outlined by the Peace Treaty, consist of the Alsace-Lorraine territory and the Saar coal mines, already described. She must also give full recognition to the Belgian claim of Moresnet. To Poland on the East, Germany is required to cede the greater part of Upper Silesia, Posen and the province of West Prussia on the left bank of the Vistula, while in regard to East Prussia, which becomes a German island surrounded by Polish territory, a plebiscite is to determine the ultimate frontier. Danzig and the district adjacent thereto is to be constituted the "Free State of Danzig" under the guaranty of the League of Nations, but to be included within the Polish customs frontier, and Poland is to have the use of the city's docks and waterways. Germany must also concede to Poland the privilege of railroad communication across German territory to Danzig, and Poland must in turn grant similar privileges to Germany across the Polish territory

between East Prussia and Germany. On the Northwest the people of North Schleswig and those of a part of Central Schleswig are to be given the privilege of determining the return of their territory to Denmark or the retention of German control, and the fortifications of Heligoland are to be destroyed. Parts of the Elbe, Danube, Oder and Niemen rivers are to be internationalized, and the Kiel Canal is to be opened to the merchant shipping of all nations at peace with Germany. She is also required to lease to the Republic of Czecho-Slovakia for a period of 99 years certain areas in the harbors of Hamburg and Stettin as free zones. As a guaranty for the execution of the treaty, the German territory west of the Rhine, together with the bridgeheads, is to be occupied by the Allied and associated troops for 15 years. Germany's losses of area are in general terms: to France, about 6,000 square miles and 2,000,000 people; to Poland, 30,000 square miles and 6,000,000 people. She loses about 15 per cent of her former area and about 10 per cent of her population, to say nothing of the loss of the Saar coal mines or of her colonies and dependencies in Africa, Asia and the Pacific with an area of about 1,000,000 square miles and a population of about 12,000,000. The new form of government is a republic with a president to be elected by the whole German people for a term of seven years. Its operations in the first year were characterized by the adoption of socialistic laws and regulations, especially in control of basic industries.

Austria-Hungary.—Austria-Hungary's losses of territory and population are much greater than those of Germany. The area of the Austro-Hungarian monarchy at the beginning of the war was 260,000 square miles and the population 51,000,000. The Austrian territory was stated at 116,000 square miles and the population in 1910 28,325,000; the Hungarian territory 126,000 square miles and the population 21,000,000, and in addition to this, Hungary had the administration of Bosnia and Herzegovina with an area of about 19,000 square miles and a population of about 2,000,000. In October 1918 a part of the territory formerly known as Austria established itself as a republic under the title of German Austria, the area which it claimed amounting to about 40,000 square miles or approximately 15 per cent of the former Austro-Hungarian Empire, the population about 9,000,000 or about 19 per cent of the former empire. In the same month, the Austrian provinces of Bohemia, Moravia and Silesia and certain Hungarian area designated as Slovakia organized themselves as the Republic of Czecho-Slovakia. The Austrian territory passing into this new republic was about 30,000 square miles and the population about 9,000,000; that of Hungary passing into the Czecho-Slovakian Republic was estimated at approximately 30,000 square miles and the population about 4,000,000. At the same time, the southern part of Hungary established itself as an independent nation with the title of Jugo-Slavia or Yugo-Slavia and including Bosnia-Herzegovina, Dalmatia, Croatia, Slavonia, Carniola, Carinthia, Styria, Istria, Gorizia-Gradisca, and certain adjacent islands. Some of these islands and smaller provinces have, however, passed to the control of Italy. A small section at the southeast of Austria was transferred to Italy and this included the former Austrian port of Trieste, leaving Austria without direct access to tidewater over her own territory. The fragment of former Austria which now retains the title of German Austria is about 40,000 square miles in area as against 107,000 in the former Austria and with a population of about 9,000,000 as against 28,000,000 in Austria in 1913.

Hungary established itself as an independent republic (the Hungarian Peoples Republic) in November 1918 with an area much less than that of the Hungarian Kingdom as it existed as a part of Austria-Hungary. A considerable section at the south was incorporated into the new state of Jugo-Slavia, and a large section at the east including Transylvania passed under the control of Rumania. Subsequently (in the latter half of 1919) Rumanian troops occupied a considerable part of the eastern section of the territory which had been designated as the Hungarian Peoples Republic, and still later an attempt was made to transform this republic into a limited monarchy. No definite statement can at this time be given as to the exact area or population of the Hungarian state. The best estimate available is an area of about 35,000 square miles or 30 per cent of the area formerly the Kingdom of Hungary, and the population about 8,000,000 or a little over one-third that of the kingdom in 1913. Her principal port of Fiume passed under control of the new state of Jugo-Slavia but its control was late in 1919 taken over by a military organization originating in Italy, and finally occupied by the Italian government pending a final settlement. Hungary, by these incidents, loses her entire frontage on the Adriatic as does also German Austria, though it is expected that both the new republics will be given access to the Adriatic through the internationalization of certain railway lines connecting their trade centres with certain of the Adriatic ports.

Bulgaria.—Bulgaria, by the terms of the treaty submitted by the Peace Conference late in 1919 and accepted by Bulgaria, loses sundry small areas in adjustment of her boundaries with the new state of Jugo-Slavia; also western Thrace which formed her outlet to the Ægean, though she still retains her frontage upon the Black Sea and is promised traffic routes to the Ægean by some plan not yet announced.

Russia.—The changes in Russian territory as relates to political divisions and government are even more striking than those of Germany or Austria-Hungary. While the various groups of Russian political agitators attempted one by one to include all of the former Russian territory in their proposed governments, they were opposed by various groups of people in the different sections of that great area, who desired to establish themselves respectively as new and independent states composed of distinct ethnic or racial stocks. The abdication of the Emperor Nicholas II in March 1917 was followed by a provisional government which continued until 16 May 1917, when it was reorganized with Alexander Kerensky as the head of the new Cabinet, but this was in turn reorganized in October 1917, maintaining itself until 7 November 1917, when the Military Revolutionary Committee seized the government authority and handed it over to the All-Russian Congress of

the Councils of Workmen's, Soldiers' and Peasants' Deputies. A Constituent Assembly was created and a form of government established controlled by the Executive Committee of the Congress of the Councils of Workmen's, Soldiers' and Peasants' Deputies. On 31 Jan. 1918, a decree was issued establishing the permanent character of the Workmen's and Peasants' (Bolshevik) government. On 14 March, 1918, the People's Commissioners left Petrograd for Moscow, which thus became the centre of the government. The title of the government thus established is the "Russian Federated Republic"; its flag is red with the legend, "Federal Republic of the Soviets." Its control over Russian territory cannot be definitely stated, however, as to the area in which it exercises jurisdiction and administers government or the number of people under its immediate control or administration. In every part of the area formerly known as Russia groups of people have established themselves by proclamation and organization as independent governments, in nearly all cases republics.

One of the largest and earliest of the groups establishing themselves as independent governments was the republic of Ukrainia, occupying the southwestern section of Russia and fronting upon the Black Sea with Odessa as its principal port. It declared its independence in November 1917 under the title of the "Ukraine Peoples Republic," but its boundaries are still somewhat in dispute, especially with the neighboring republic of Poland, which was formed in part from Russian and in part from German and Austrian territory. The Ukrainian Republic has, so far as can be determined, an area of about 215,000 square miles and a population of approximately 30,000,000. It has a large part of the area known as the "Black Soil District" and its agricultural and mineral possibilites are important. Immediately north of the Ukrainian Republic is a group of people known as the White Russians who established themselves in May 1919 as the Republic of White Russia, with an area estimated at 140,000 square miles and a population of approximately 5,000,000. Immediately west of the Republic of White Russia and extending to the Baltic, another new republic was established in April 1918 under the title of the Republic of Lithuania, with an area of approximately 90,000 square miles and a population estimated at about 10,000,000. Immediately north of Lithuania and also fronting upon the Baltic, the little Republic of Courland with an area of 10,000 square miles and a population of 800,000 was declared an independent government in April 1918. Next north of Courland and fronting upon the Gulf of Riga, a part of the Baltic, the Republic of Livonia was declared in April 1918, with an area of about 17,000 square miles and a population of approximately 1,600,000. The Lettish population occupying the peninsula between the Gulf of Riga and the Baltic established themselves as a republic under the title of Letvia (also sometimes written Latvia). The territory immediately north of Livonia declared itself in April 1918 as the independent Republic of Esthonia. It fronts not only upon the Baltic but on the Gulf of Finland, the entrance to the harbor of Petrograd. Its area is stated at about 7,300 square miles and its population at 1,750,000. Still further north, the people of the area long known as Finland declared themselves in December 1917 an independent republic, with a population of about 3,500,000 and an area of 125,000 square miles, extending northward to within a short distance of the Arctic Ocean. The Arctic frontage of Russia lying immediately east of the northern part of Finland was established as a military district by the Allied Powers on 7 July 1918 with a military government, and has an area of approximately 35,000 square miles and a population estimated at about 100,000. Further east on the Arctic frontage the greater part of the former Russian Province of Archangel was established under the title of the Republic of North Russia with Nicholas Tchaikovsky as its head and its existence as a separate government recognized by certain of the powers, especially Great Britain. Its area is estimated at 275,000 square miles and its population at about 400,000. The populations of both North Russia and the Murman Region are composed largely of Lapps, Finns and Samoyedes. Immediately south of the White Sea and on the eastern border of Finland, the Republic of Eastern Karelia was established in May 1919 and authorized to create a Constituent Assembly to determine whether the area shall form an alliance with Finland or Russia. The area of this republic is about 68,000 square miles and the population approximately 250,000.

In the southeastern section of Russia with its considerable sprinkling of Tatar stock intermingled with Slavic blood, a half dozen small republics sprang into existence; the Tauride Republic, including the Crimean Peninsula, with an area of approximately 23,000 square miles and a population of 1,800,000, declared itself independent of Russia in March 1918; the Kuban Republic just east of the Sea of Azov, with an area of 36,000 square miles and a population of 3,000,000, declared itself independent in November 1919; the Terek Republic at the southeast of Kuban and extending north across to the Caspian Sea, with an area of 28,000 square miles and a population of 1,300,000, declared itself independent in September 1918; the Republic of Georgia, at the extreme eastern end of the Black Sea, with an area of 40,000 square miles and a population of 2,500,000, was declared an independent state in January 1918; the Don Republic lying at the northeast of the Sea of Azov and fronting upon that sea, with an area of 63,000 square miles and a population of 4,000,000, declared itself independent in January 1918. East of the Caspian, the Turkestan area, consisting of about 400,000 square miles and with a population of 6,500,000, was in January 1918 established as an independent government under military control; north of the Caspian, the Tatar-Bashkir Republic was established in October 1918, its area being estimated at 175,000 square miles and its population at 9,000,000; the government is under military control.

Passing across the Urals into Siberia, the independent Republic of Siberia was proclaimed in December 1917, with its capital at Tomsk, and a Siberian Duma of 30 members was opened. Later, however, it was decided for the time being to concentrate all power in the hands of a single individual, Admiral Kolchak. No statement is made as to the actual area claimed by the Republic of Siberia, though presumably

it would include a large part of the area of Siberia stated at 4,832,000 square miles and a population of 10,378,000. At the extreme northeast of the Siberian area, a separate government designated as the Yakutsk Republic was established in May 1918 with a military government and an area estimated at about 1,000,000 square miles and a population of 400,000.

The above 20 new political divisions created from Russian territory and chiefly of Slavic stock are in many cases shadowy in the matter of boundary lines and details of governmental operations. Some of them were established for military reasons and others through a sincere desire on the part of the people to establish independent governments which will group closely their respective ethnic or racial stocks. No predictions can be made as to their permanency or future activities in view of the constant turmoil and military activities still prevailing in a large part of the area in question. The fact, however, that the area has been separated into these numerous independent organizations reduces to a minimum for the near future the possibilities of Russia in industry and commerce, and adds gravity to the remark of Professor Grosvenor, above quoted, that "lack of self-reliance or of initiative capacity, anciently as now, appeared to be a characteristic almost inseparable from the Slav. Dependence upon some helping or guiding hand has often resulted in his own undoing, while he himself has seemed unable to retain what his industry or courage had won."

Turkey.—While no definite action has yet been taken by the Peace Congress or the Allies in the readjustment of Turkish territory, the plans outlined include the creation of a half dozen new organizations, some to be governed by "mandate" through representatives by certain of the Allied Powers, while other sections have broken off from the central government and established themselves under local leaderships.

The first section of Turkish territory to voluntarily separate itself as a separate government was the Kingdom of Hejaz, with an area of about 96,000 square miles, extending along the eastern coast of the Red Sea and including the Mohammedan sacred cities of Mecca and Medina. It declared its independence as the Kingdom of Hejaz in June 1916 and was recognized by the British government as an independent political entity, and later by the Peace Conference which accepted its representative as a member of that body. Its population is estimated at about 300,000. Lying to the east of Hejaz is the great desert area of Arabia, composed in large degree of shifting sands and a nomadic population, though in the vicinity of the oases the population is more permanent in character. In half a dozen of these local groups of people, the native chieftains have established their own rule. The Emirate of Nejd and Hasa, the more powerful of the two Central Arabian principalities, has its capital at Riyadh; the Emirate of Jebel Shammar, lying immediately north of the Nejd, with its capital at Hail, is ruled by an emir; the Imamate of Yemen, with its political centre at Sana; the Principate of Asir on the west coast, between Hejaz and Yemen, with its capital at Sabivah; the Sultanate of Koweit on the Persian Gulf; and the Sultanate of Oman in the extreme southeast at the entrance of the Persian Gulf, with an area of 82,000 square miles and an estimated population of 500,000. Lying north of these areas governed by native rulers is Palestine fronting upon the Mediterranean which, it is assumed, will be considered British territory by reason in part of her capture of Jerusalem and, further east, the Mesopotamia Valley which was successfully invaded by British troops during the war. Immediately north of Palestine is Syria over which France is expected to be given control. The area of Palestine is small, about 16,000 square miles and a population of 500,000; Mesopotamia, 143,000 square miles and a population of 2,000,000; Syria, 37,000 square miles, and a population of 1,000,000. North of Syria lie the important provinces of Armenia with an area of 75,000 square miles and a population of 2,500,000; Anatolia, 145,000 square miles and a population of 5,000,000, of which Greece is to have a part of the Ægean frontage; and the small European area remaining under the Turkish flag, 10,000 square miles and a population of 1,900,000, the future government and governing power in each of these being yet undetermined, though sufficient has developed to justify the statement that the Turkish territory is, like that of Russia and Austria-Hungary, to be transformed into comparatively small political divisions independent of each other and thus not likely in the immediate future at least rapidly to develop industrial or commercial power. Nothing has yet been determined as to the future government of Constantinople and the small European Turkish territory by which it is surrounded.

While only a comparatively small proportion of the newly established states have progressed to a point at which it is practicable to state in any detail their physical, industrial, financial or commercial condition and possibilities, it seems proper to state the new facts now available with reference to those for which such material can be presented.

Poland.—While no exact figures are available at present as to the area or population of Poland, an estimate by Polish authorities puts the total area at 135,000 square miles and a population of 36,000,000. To the area formerly known as Polish Russia is now added those territories ethnographically Polish but which were long ago detached and annexed by other states. This would include a large part of Upper Silesia, East Prussia, Galicia, Posen, and perhaps a part of Lithuania. Coal, iron ore, zinc, lead, potassium salt and rock oil are among the minerals; the agricultural products include wheat, rye, oats, barley, potatoes and sugar beets; and in the industries, those of textiles and iron and steel are the most important. Danzig on the Baltic, formerly in German territory, is to be by order of the Peace Conference constituted the "Free State of Danzig" under the guaranty of the League of Nations but to be included within the Polish customs frontier and Poland is to have the use of the city's docks and waterways. Germany must also concede to Poland the privilege of railroad communication across German territory to Danzig, thus assuring Poland of a permanent port.

Ukrainia.—The Ukrainian Peoples Republic, proclaimed on 21 Nov. 1917, lies immediately north of the Black Sea with Odessa as its principal port. Its area is estimated at

AREA, POPULATION, DATE OF DECLARATION OF INDEPENDENCE, PROPOSED FORM OF GOVERNMENT, COUNTRIES FROM WHICH FORMED AND ETHNIC OR RACIAL STOCK OF NEWLY ESTABLISHED POLITICAL UNITS RESULTING FROM THE WAR—SO FAR AS CAN BE STATED.

	*Area	*Population	Date established	Form of government	Countries from which formed	Ethnic or racial stock
Poland	135,000	36,000,000	Nov., 1916	Republic	Russia, Germany, Austria-Hungary	Slavic; Semitic
Czecho-Slovakia	60,000	13,000,000	Oct., 1918	Republic	Austria-Hungary, Germany	Slavic
Jugo-Slavia	85,000	10,500,000	Oct., 1918	Kingdom	Hung., Serbia, Bos., Herzegovina, Montenegro	Slavic, Serbs, Croats
Ukrainia	215,000	30,000,000	Nov., 1917	Republic	Russia, Austria-Hungary	Slavic
Esthonia	7,300	1,750,000	April, 1918	Republic	Russia	Slavic
Livonia	17,000	1,650,000	April, 1918	Republic	Russia	Slavic
Courland	10,000	800,000	April, 1918	Republic	Russia	Slavic
Letvia	10,000	60,000	1917	Republic	Russia	Lettish
Lithuania	90,000	10,000,000	April, 1918	Republic	Russia	Slavic; Germanic
White Russia	140,000	5,000,000	May, 1918	Republic	Russia	Slavic
North Russia	275,000	400,000	Nov., 1918	Military gov.	Russia	Slavic; Finns
Rus. Fed. Soviet Rep.	undet'd	undet'd	Nov., 1917	Soviet Rep.	Russia	Slavic
Don Republic	63,000	4,000,000	Jan., 1918	Military gov.	Russia	Slavic; Cossack
Kuban Republic	36,000	3,000,000	Nov., 1918	Republic	Russia	Slavic
Tauride Republic	23,000	1,800,000	Mar., 1918	Republic	Russia	Slavic; Tatar
Terek Republic	28,000	1,300,000	Sept., 1918	Republic	Russia	Turko-Tatar
Tatar-Bashkir Republic	175,000	9,000,000	Oct., 1918	Military	Russia	Turko-Tatar
Yakutsk Republic	1,000,000	400,000	May, 1918	Military	Siberian Russia	Yakuts; Cossack
Republic of Siberia	undet'd	undet'd	Dec., 1917	Military	Siberian Russia	Slav; Mongol; Tatar
Republic of Georgia	40,000	2,500,000	Jan., 1918	Republic	Russia, Turkey	Georgian; Armenian
Republic of Turkestan	400,000	6,500,000	Jan., 1918	Military	Russia	Turko-Tatar
Eastern Karelia	68,000	250,000	May, 1919	Military	Russia	Balto-Slavic
Finland	125,000	3,500,000	Dec., 1917	Republic	Russia	Finns
Murman Region	35,000	100,000	July, 1918	Military	Russia	Finns
German Republic	175,000	60,000,000	Nov., 1918	Republic	Germany	Germanic
Rep. of German Austria	28,000	10,000,000	Oct., 1918	Republic	Austria	Germanic
Hungarian Republic§	32,000	9,000,000	Nov., 1918	Soviet Rep.	Hungary	Magyar
Rumania†	110,000	12,500,000	——, 1919	Kingdom	Rumania, Hungary, Bessarabia	Rumanians, Magyars
Turkey in Europe	10,000	1,900,000	.....	undetermined	Turkey	Turkisk
Anatolia, Asia-Minor	145,000	5,000,000	.....	undetermined	Turkey	Turkish
Armenia, Asia-Minor	75,000	2,500,000	Aug., 1918	undetermiued	Turkey	Armenians
Mesopotamia, Asia-Minor	143,000	2,000,000	1917	British admin.	Turkey	Turks, Arabs, Persian
Syria, Asia Minor	37,000	1,000,000	1919	undetermined	Turkey	Syrian, Turkish
Palestine, Asia-Minor	16,000	500,000	1917	British admin.	Turkey	Turks, Arabs, Jews
Kingdom of Hejaz	96,500	300,000	June, 1916	Kingdom	Turkey	Arabs, Turks
Nejd & Hasa, Arabia	no data	no data	1913	Emirate	Turkey	Arabs
Jebel Shammar, Arabia	no data	no data	1918	Emirate	Turkey	Bedouin
Asir, Arabia	no data	no data	1918	Principate	Turkey	Arabs
Yemen, Arabia	no data	no data	1918	Imamate	Turkey	Arabs
Koweit, Arabia	no data	no data	1918	Sultanate	Turkey	Arabs
Oman, Arabia	82,000	500,000	1913	G. Br. & France	Turkey	Arabs
Egypt	350,000	12,000,000	1914	Gt. Britain	Turkey	Egyptians
German East Africa	384,000	8,000,000	1918	Gt. Britain	German Colony	Bantu
German S. W. Africa	322,000	200,000	1915	Brit. S. Africa	German Colony	Hottentots
Kamerun	191,000	2,500,000	1916	Brit. & French	German Colony	Sudanese
Togo	33,000	1,000,000	1914	Allied Military	German Colony	Hamitic
Kaiser Wilhelm Land	70,000	250,000	1918	Australia	German Colony	Malay
German Samoan Islands	1,200	40,000	1918	Australia	German Colony	Samoan
Nauru Island	‡	‡	1918	Mandate, Brit.	German Colony	Samoan
Ger. S. Pacific Islands	15,000	350,000	1918	Australia	German Colony	Malay
Ger. N. Pacific Islands	5,000	600,000	1918	Mandate, Japan	German Colony	Malay
Kiao-Chau	200	200,000	1918	Japan	German Colony	Chinese

* Latest available estimate.
†Enlarged by absorption of Hungarian territory.
‡ A small island in the Marshall group occupied as a wireless station; also known as Pleasant Island.
§ Limited monarchy proposed 1919.

about 216,000 square miles and with a population of approximately 30,000,000. A considerable part of Ukrainia belongs to the Black Soil Region of Russia and its agricultural products, wheat and other cereals, sugar beets, potatoes and food animals, are thus important, while the fact that the deposits of iron ore were looked upon as the most important in all of Russia and with rich coal deposits in the Donetz Basin gives promise of industrial and commercial activity for the Republic of Ukrainia.

Czecho-Slovakia.— The Czecho-Slovak Republic was declared on 28 Oct. 1918. It comprises two branches of the same nation, the 7,000,000 Czechs of Bohemia, Moravia and Silesia, and the 3,000,000 Slovaks in Upper Hungary who speak a dialect of Czech. It includes Bohemia, Moravia, Silesia and Slovakia with an estimated area of 60,000 square miles and a population estimated at about 13,000,000. About 5,000,000 are Bohemians, 3,000,000 Slovaks, 2,000,000 Moravians, and 2,500,000 Germans. Its principal city and capital, Prague, has a population of about 500,000. The agricultural area is looked upon as one of the most important in interior Europe, supplying large quantities of sugar beets, potatoes and other important crops. The coal mines are considered exceptionally valuable and the manufacturing industries were highly developed prior to

the war, the number of factories in operation have been upward of 5,000. Czecho-Slovakia has no ocean frontage, though it is expected that an agreement will be made for its permanent use of a harbor on the Adriatic with railroad facilities guaranteed through intervening territory and similar privileges are provided at Hamburg and Stettin.

Jugo-Slavia.— Jugo-Slavia, which includes within its borders the Slavic peoples of Croatia, Slavonia and Dalmatia, and certain parts of the former Adriatic frontage of Hungary combined with Serbia and Montenegro, will have an area of approximately 85,000 square miles and a population of about 10,000,000, with frontage upon the Adriatic. Its producing powers agriculturally are little more than sufficient to meet the requirements of the population and manufacturing has not yet been actively developed.

Of the numerous other groups which have been declared independent political units, little can at present be said other than to state the estimated area, population, ethnic stock of the people, date of establishment, form of government, and countries which contributed the area, and these facts are presented in the table on the preceding page, though it is proper to add that in many instances the figures of area and population are necessarily estimated.

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28. EFFECT OF THE WAR ON CURRENCY. The World War made great changes in world currency, and especially in the countries participating in that conflict. The paper currency of 30 principal countries of the world at the beginning of the war aggregated a little over $7,000,000,000; at the end of the war, November 1918, it was about $40,000,000,000; and in December 1919 it totaled $51,000,000,000, these figures being of course in very round terms, and exclusive of the currency issues of the Bolshevik government, which alone are estimated at $34,000,000,000. The gold reserve of the 30 countries in question was in 1914 a little less than $5,000,000,000; in 1918 a little over $7,000,000,000; and in 1919 slightly below the $7,000,000,000 line. The ratio of gold reserve to outstanding notes in the 30 countries in question was in 1914, 70 per cent; by 1918 it had dropped to 18.4 per cent; and in December 1919 was 13.7 per cent.

The world paper currency at the date of the Armistice was more than five times as great as at the beginning of the war, and one year later, December 1919, was seven times as much as at the beginning of the war. The actual increase during the year succeeding the Armistice was over $10,000,000,000 or a 25 per cent increase over that existing at the end of hostilities. These figures of the currencies of the countries named are based upon the normal pre-war value of the respective currencies as expressed in United States gold coin.

Most of this increase both during and subsequent to the war occurred of course in the countries participating in that great conflict. Taking the 23 countries and colonies which were in a greater or lesser degree participants in the war, their paper currency in July 1914 aggregated in round terms $6,000,000,000; in November 1918, $37,000,000,000; and in December 1919, $48,000,000,000; these figures being again in extremely round terms. Meantime their stock of gold when taken in the aggregate showed but a small increase, from $4,360,000,000 in 1914 to $6,050,000,000 in 1918, and $5,640,000,000 in 1919. Their ratio, as a group, of gold to circulating notes, was in 1914, 71.3 per cent; in November 1918 15.8 per cent; and in December 1919 11.2 per cent. In certain countries, notably those of interior Europe, including the Central Powers and Russia, the ratio of gold to notes fell with a much greater rapidity than that above noted; that of Austria-Hungary from 54.8 per cent to about 0.5 per cent; Russia from 98 per cent in 1914 to approximately 7 per cent at the date of the advent of the Bolsheviki; Germany from practically 70 per cent in 1914 to 3.5 per cent in 1919. Among the European Allies, the reduction in ratio of gold to notes was also notable but less dramatic than that of the Central Powers, the drop in ratio of gold to notes being in the case of France from 62 per cent in 1914 to 11.2 per cent at the close of the war, and 9.6 per cent in 1919; Italy from 70 per cent in 1914 to 7.5 per cent in 1919; while in our own case the ratio of gold to notes dropped from 99.6 per cent in 1914 to 63.2 per cent in 1918, and 52.3 per cent in 1919. The Central Powers as a group show a ratio of gold to notes in 1914 49.7 per cent; in 1918 5.5 per cent; and in December 1919 but 1.7 per cent. The Allies as a group show a gold ratio in 1914 of 76.6 per cent, in 1918 20.8 per cent and in 1919 17.1 per cent.

The neutrals of course fared better in the matter of their currency than did those participating in the war, though the total of their paper figures did increase from $1,166,000,000 in the eight countries for which figures are available to $2,421,000,000 in 1919, though the increase of gold was still larger proportionately, from $516,000,000 in 1914 to $1,451,000,000 in 1919, bringing the ratio of gold to notes in this group of eight neutrals from 44.3 per cent in 1914 to 59.9 per cent in 1919. (See accompanying table for details for each of the 30 countries included in the study).

The most astonishing, not to say alarming, feature of this growth of world paper currency and reduction in the ratio of gold reserve thereto, occurs in the development of the year following the war. It was, of course, necessary that the governments while participating in the war should largely increase their quantities of currency, and they did, as is shown from the fact that the paper currency of the 23 countries in question jumped from $6,109,000,000 in July 1914 to $37,284,000,000 at the end of the war, November 1918; though why it should have been necessary to add another $11,000,000,000 in the year following the close of the war and bring the grand total of December 1919 up to $48,362,000,000 is difficult to understand, especially when we realize that none of this increase of $11,000,000,000 in the 13 months following the Armistice included any of the $34,000,000,000 of paper issued by the Bolsheviki government from its establishment late in 1917 to the end of 1919, and which is described by persons familiar with conditions in Bolshevik Russia as "having no gold backing and therefore absolutely valueless."

The table which follows shows the currency conditions as to circulating notes and gold reserve in the 30 principal countries of the world in 1914, 1918 and 1919. These figures include in most cases only the currency issues and gold reserve of the great State Banks, such as the Bank of France, the Bank of Italy, the Imperial Bank of Germany, the Austro-Hungarian Bank, the National Bank of Belgium and the Swiss National Bank; though the figures with reference to Great Britain include not only those of the Bank of England but the "Currency Notes Account" which was separately stated by the government from the early part of the war period downward. The figures presented in this table are, therefore, exclusive in most instances of the comparatively small amounts of paper currency represented by other banks of issue, though this statement applies only to those countries having the great banking organization usually termed "State Banks," such as those above cited. The value, in United States dollars, of the paper currency in each country is based upon the pre-war value of the currencies of the respective countries.

PAPER CURRENCY AND GOLD RESERVE OF PRINCIPAL COUNTRIES, PRIOR TO THE WAR, AT THE DATE OF THE ARMISTICE AND DECEMBER 1919*

(In millions of United States dollars).

BELLIGERENTS	July, 1914			November, 1918			December, 1919		
	Gold	Notes	Ratio of gold to notes: %	Gold	Notes	Ratio of gold to notes: %	Gold	Notes	Ratio of gold to notes: %
Austria-Hungary	255	464	54.8	54	7,207	.7	53	10,001	.5
Australia	29	48	60.1	85	255	33.2	86	260	33.9
Belgium	65	180	36.7		No data		†69	909	7.5
Brazil	125	175	71.5	38	560	6.7	44	582	8.0
Bulgaria	27	32	83.3	12	342	3.6	9	476	2.1
Canada	94	162	58.1	145	287	50.1	123	300	41.0
Egypt	8	13	60.1		No data		17	301	5.8
Finland	7	24	28.1	8	213	3.9	8	205	4.0
France	806	1,301	62.1	665	5,951	11.2	709	7,286	9.6
Germany	298	692	43.2	621	4,127	15.0	266	7,561	3.5
Great Britain	195	140	134.6	521	2,049	25.6	584	2,132	22.9
Greece	47	39	120.0	277	221	125.5	347	266	130.3
India	124	220	56.2	174	330	52.7	183	336	54.3
Italy	236	337	70.1	160	1,621	9.8	157	2,085	7.5
Japan	106	159	66.8	330	401	82.3	389	532	73.1
New Zealand	30	10	300.0	40	30	130.0	39	36	112.1
Portugal	6	83	7.3	9	264	3.5	10	400	2.6
Rumania	43	147	28.9	34	457	7.3	34	721	4.8
Russia	777	795	98.3	628	8,936	7.0	336	9,456	‡3.5
Siam	4	12	33.7	6	24	27.3	7	27	29.9
South Africa (British)	38	11	340.1	43	23	188.9	43	24	182.1
Turkey	16	9	177.1		No data		70	704	3.1
United States	1,023	1,056	99.6	2,199	3,643	63.2	2,107	4,001	52.3
Total belligerents	4,359	6,109	85.4	6,049	36,941	16.2	5,640	48,601	11.5
PRINCIPAL NEUTRALS									
Argentina	235	428	55.1	379	494	76.6	394	513	76.8
Denmark	20	42	47.2	51	115	44.4	52	130	39.8
Holland	66	125	52.1	282	439	64.2	256	420	61.1
Java	12	47	25.8	43	80	55.3	65	116	55.7
Norway	14	33	43.8	33	110	29.7	40	115	34.5
Sweden	28	60	46.2	75	211	35.5	81	194	41.8
Spain	106	378	28.1	434	627	68.6	471	749	62.9
Switzerland	35	52	67.2	74	185	39.7	92	183	50.5
Total of neutrals	516	1,165	44.3	1,371	2,261	60.7	1,451	2,420	60.0
Grand total of belligerents and principal neutrals	4,875	7,274	70.8	7,420	39,202	18.4	7,091	51,021	13.7

* The figures of gold and notes are in most cases those of the State Banks of the countries named (Bank of France, Bank of England, Imperial Bank of Germany, Austro-Hungarian Bank, National Bank of Belgium, Swiss National Bank, etc.) and do not include notes of other banks of issue. In the case of the United States the figures as supplied by the Treasury Department are exclusive of gold and silver certificates which are considered as warehouse certificates for an equivalent amount of metal deposited with the Treasury. British figures include Bank of England and the "Currency Notes Account." Russian figures are exclusive of Bolsheviki notes, estimated in 1919 at a face value of about $34,000,000,000 but with practically no gold reserve. All currency figures are in millions of United States dollars, calculated at the normal (pre-war) value of the currency of the respective countries.

† Includes silver.

‡ Exclusive of Bolsheviki notes estimated at a face value of $34,000,000,000, but without gold reserve.

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WAR, European — Congressional Medal of Honor Awards.— The Congressional Medal of Honor was the most highly prized as it was the most difficult to obtain of all military decorations. See MEDAL OF HONOR, UNITED STATES MILITARY. There were only 78 awards of this medal and of the 78 men on the honor roll 24 lost their lives, most of them in the action for which they were cited. Below is the honor roll of those who merited the highest symbol of appreciation in the gift of the United States. The names are in order of the

dates of the action for which the awards were made from 6 June 1918 to 9 Nov. 1918.

CHARLES F. HOFFMAN, Gunnery Sergeant, 5th Marines, Chateau-Thierry, 6 June 1918.
THOMAS A. POPE, Corporal, Co. E., 131st Infantry, Hamel, 4 July.
GEORGE PRICE HAYS, First Lieutenant, 10th Field Artillery, Villers Cotterets, 14–15 July.
LOUIS CUKELA, Sergeant, 5th Marines, Villers Cotterets, 18 July.
*GEORGE DILBOY, Private, Co. H, 103rd Infantry, Belleau, 18 July.
*MATEJ KOCAK, Sergeant, 5th Marines, Soissons, 18 July.
SIDNEY E. MANNING, Corporal, Co. C, 167th Infantry, Breuvannes, 28 July.
JAKE ALLEN, Corporal, Co. H, 131st Infantry, Chippilly Ridge, 9 August.
*JAMES I. MESTROVITCH, Sergeant, Co. C, 111th Infantry, Fismette, 10 August.
*J. HUNTER WICKERSHAM, Second Lieutenant, 353rd Infantry, Limey, 12 September.
L. WARDLAW MILES, Captain, 308th Infantry, Revillon, 14 September.
*EMORY J. PIKE, Lieutenant-Colonel, Machine Gun Battalion, Vandières, 15 September.
DONALD CALL, Corporal, Tank Corps, Varennes, 26 September.
SYDNEY G. GUMPERTZ, First Sergeant, Co. E, 132nd Infantry, Bois de Forges, 26 September.
PHILIP C. KATZ, Sergeant, Co. C., 363rd Infantry, Eclisfontaine, 26 September.
GEORGE H. MALLON, Captain, 132nd Infantry, Bois de Forges, 26 September.
WILLIE SANDLIN, Private, Co. A, 132nd Infantry, Bois de Forges, 26 September.
LLOYD M. SEIBERT, Sergeant, Co. F, 364th Infantry, Epinonville, 26 September.
*ALEXANDER R. SKINKER, Captain, 138th Infantry, Cheppy, 26 September.
CHESTER H. WEST, First Sergeant, Co. D, 363rd Infantry, Bois de Cheppy, 26 September.
*NELS WOLD, Private, Co. I, 138th Infantry, Cheppy, 26 September.
*WILLIAM B. TURNER, First Lieutenant, 105th Infantry, Ronssoy, 27 September.
REIDER WAALKER, Sergeant, Co. A, 105th Infantry, Ronssoy, 27 September.
*OSCAR F. MILLER, Major, 361st Infantry, Gèsnes, 28 September.
*FRED E. SMITH, Lieutenant-Colonel, 308th Infantry, Binarville, 28 September.
ALAN LOUIS EGGERS, Sergeant, M. G. Co., 107th Infantry, Le Câtelet, 29 September.
JOHN CRIDLAND LATHAM, Sergeant, M. G. Co., 107th Infantry, Le Câtelet, 29 September.
*THOMAS E. O'SHEA, Corporal, M. G. Co., 107th Infantry, Le Câtelet, 29 September.
JOSEPH B. ADKINSON, Sergeant, Co. C, 119th Infantry, Bellicourt, 29 September.
FRANK GAFFNEY, Private, 108th Infantry, Ronssoy, 29 September.
*MILO LEMERT, First Sergeant, Co. H, 119th Infantry, Bellicourt, 29 September.
*FRANK LUKE, First Lieutenant, Aviation, Murvaux, 29 September.
GEORGE S. ROBB, First Lieutenant, 369th Infantry, Sechault, 29 September.
FRANK J. BART, Private, Co. C, 9th Infantry, Medeah Farm, 3 October.
JOHN JOSEPH KELLY, Private, 6th Marines, Blanc Mont Ridge, 3 October.
*JOHN H. PRUITT, Corporal, 6th Marines, Blanc Mont Ridge, 3 October.
BENJAMIN KAUFFMAN, First Sergeant, Co. K, 308th Infantry, Argonne Forest, 4 October.
*HAROLD W. ROBERTS, Corporal, Tank Corps, Montbrehain Woods, 4 October.
MICHAEL B. ELLIS, Sergeant, Co. C, 28th Infantry, Exermont, 5 October.
ARCHIE A. PECK, Private, Co. A, 307th Infantry, Argonne Forest, 6 October.
JOHN L. BARKLEY, Private, Co. K, 4th Infantry, Cunel, 7 October.
EDWARD R. TALLEY, Sergeant, Co. L, 117th Infantry, Ponchaux, 7 October.
RALYN HILL, Corporal, Co. H, 129th Infantry, Dannevoux, 7 October.
JOHANNES S. ANDERSON, Sergeant, Co. B, 132nd Infantry, Cléry-le-Petit, 8 October.
*HENRY G. COSTIN, Private, Co. H, 115th Infantry, Bois de Consenvoye, 8 October.
JAMES C. DOZIER, First Lieutenant, 118th Infantry, Montbrehain, 8 October.
GARY EVANS FOSTER, Sergeant, Co. F, 118th Infantry, Montbrehain, 8 October.

* Made the supreme sacrifice.

EARL D. GREGORY, Sergeant, Hdqrs. Co., 116th Infantry, Bois de Consenvoye, 8 October.
*THOMAS LEE HALL, Sergeant, Co. G, 118th Infantry, Montbrehain, 8 October.
JAMES E. KARNES, Sergeant, Co. D, 117th Infantry, Estrées, 8 October.
PATRICK REGAN, Second Lieutenant, 115th Infantry, Bois de Consenvoye, 8 October.
SAMUEL H. SAMPLER, Sergeant, Co. M, 142nd Infantry, St. Etienne, 8 October.
CLAYTON K. SLACK, Private, Co. E, 124th Infantry, Consenvoye, 8 October.
HAROLD L. TURNER, Corporal, Co. F, 142nd Infantry, St. Etienne, 8 October.
CALVIN WARD, Private, Co. D, 117th Infantry, Estrées, 8 October.
ALVIN C. YORK, Corporal, Co. G, 328th Infantry, Châtel-Chehery, 8 October.
CHARLES W. WHITTLESLEY, Major, 308th Infantry, Argonne Forest, 2–8 October.
GEORGE G. MCMURTRY, Captain, 308th Infantry, Argonne, 2–8 October.
*WILBUR E. COLYER, Sergeant, Co. A, 1st Engineers, Verdun, 9 October.
BERGER LOMAN, Private, Co. H, 132nd Infantry, Consenvoye, 9 October.
RICHMOND H. HILTON, Sergeant, Co. H, 118th Infantry, Brancourt, 11 October.
*ROBERT L. BLACKWELL, Private, 119th Infantry, Saint Souplet, 11 October.
*JAMES D. HERIOT, Corporal, Co. I, 118th Infantry, Vaux-Andigny, 12 October.
SAMUEL WOODFILL, First Lieutenant, 60th Infantry, Cunel, 12 October.
JOHN C. VILLEPIGUE, Corporal, Co. M, 118th Infantry, Grand-Pré, 15 October.
THOMAS C. NEIBAUR, Private, Co. M, 167th Infantry, Landres-et-St.-Georges, 16 October.
*WILLIAM SAWELSON, Sergeant, 312th Infantry, Grand-Pré, 26 October.
*MICHAEL J. PERKINS, Private, Co. D, 101st Infantry, Belleau Wood, 27 October.
JESSE N. FUNK, Private, 354th Infantry, Bois de Bantheville, 31 October.
CHARLES D. BARGER, Private, Co. L, 354th Infantry, Bois de Southeville, 31 October.
ARTHUR J. FORREST, Sergeant, Co. D, 354th Infantry, Remonville, 1 November.
RICHARD A. FURLONG, First Lieutenant, 353rd Infantry, Bantheville, 1 November.
*MARCELLUS H. CHILES, Captain, 356th Infantry, Le Champy Bas, 3 November.
EDWARD S. ALLWORTH, Captain, 60th Infantry, Cléry-le-Petit, 5 November.
M. WALDO HATLER, Sergeant, Co. B, 356th Infantry, Exermont, 8 November.
*DAVID B. BARKELEY, Private, Co. A, 356th Infantry, Pouilly, 9 November.
HAROLD I. JOHNSTON, Sergeant, Co. A, 156th Infantry, Pouilly, 9 November.
LOUIS VAN ISESAL, Sergeant, Co. M, 9th Infantry, Mouzon, 9 November.

WAR, Instrumentalities and Methods of. The Hague Convention respecting the laws and customs of war on land (Article 23) declares that the means which a belligerent may adopt for the purpose of overcoming his enemy are not unlimited, and among the instrumentalities and methods which it expressly forbids are the use of poison and poisoned weapons; arms, projectiles and materials calculated to cause unnecessary suffering; the use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases; the use of expanding or explosive bullets; the employment of uncivilized races as troops; the compelling of the inhabitants of occupied territory to take part in the military operations against their own country, or to furnish the enemy with information regarding the location or strength of their own forces; the killing of prisoners of war; the assassination of persons belonging to the enemy forces or his civil officials; the resort to treachery or perfidy; the bombardment of undefended towns, villages or habitations; the resort to devastation except in case of military necessity; the destruction of property except when imperatively demanded by the necessities of the war, etc. These pro-

hibitions are all expressly incorporated in the war manuals of the United States, Great Britain and France. In addition to these instrumentalities and methods forbidden by The Hague Convention there are others still which are prohibited by the established customs and usages of civilized warfare. The Declaration of Saint Petersburg of 1868 affirmed the principle that war is a contest between only the armed forces of states and not a contest between their peoples as such, and that consequently the "only legitimate object which states should endeavor to accomplish during war is to weaken the military forces of the enemy; that for this purpose it is sufficient to disable the greatest number of men and that the employment of arms which needlessly aggravate the sufferings of disabled men or render their death inevitable is not permissible." There is a difference of opinion among the authorities as to whether the principle laid down in the Declaration of Saint Petersburg that war is merely a contest between the armed forces does not go too far and the late war seems to have demonstrated that belligerents will not act upon it. But there is little or no difference of opinion among writers outside Germany that there are limits beyond which considerations of humanity must take precedence over the necessities of war. As Spaight, a high English authority, has aptly remarked, "the civilized world has signed and sealed its approval of two great principles — the first, that the sole end of war is the overcoming of the military forces of the enemy; second, that as regards the means which may be adopted to secure this end certain restrictive laws apply."

German militarists and text writers, however, have long maintained a different view as to the nature and objects of war and of the instrumentalities and methods that may be employed in prosecuting it. The German manual ('Kriegsbrauch im Landkriege') asserts that "a war conducted with energy cannot be directed merely against the armed forces of the enemy state and the positions they occupy, but it will and must in like manner seek to destroy the total moral and material resources of the latter." The rights of individuals, it adds, and their property can only be taken into consideration in so far as the nature and objects of war permit. This means or seems to mean that it is permissible to direct the war not only against the armed forces of the enemy but against his education, art, science, finance, railroads, industry, everything in fact that goes to make up his *Kultur*. This view was asserted by von Moltke in a letter to Professor Bluntschli in 1880 where, criticizing Bluntschli's proposed code in general and the Declaration of Saint Petersburg in particular, he said: "I cannot agree with the Declaration of Saint Petersburg that the weakening of the armed forces of the enemy is the only legitimate object which states should endeavor to accomplish during war; no, all auxiliary resources of the hostile government must be destroyed: its finances, railroads, necessaries of life and even its prestige." This view of the nature and objects of war was that affirmed by Germany's first and greatest military writer, von Clausewitz, who advocated terrorism and violence as a means of overcoming the enemy, who declared that an invader has the right to live on the country, that war must support war and that the resource of requisition and contribution "has no limits except those of exhaustion, impoverishment and devastation."

Views less extreme, although sufficiently so to be condemned by practically all writers outside Germany, have more recently been asserted by Generals von Hartmann, von der Goltz, von Hindenburg, von Bissing, Bernhardi and other German militarists. General von Hindenburg in an interview published in the Vienna *Neue Freie Presse* in November 1914, said: "One cannot make war in a sentimental fashion. The more pitiless the conduct of the war the more humane it is in reality, for it will run its course all the sooner. The war which of all wars is and must be the most humane is that which leads to peace with as little delay as possible." Speaking on 29 Aug. 1915, at Münster, of the extreme measures which the Germans had felt obliged to take against the civil population of Belgium, General von Bissing said: "The innocent must suffer with the guilty. In the repression of infamy, human lives cannot be spared and if isolated houses, flourishing villages and even entire towns are annihilated, that is regretable but it must not excite ill-timed sentimentality. All this must not in our eyes weigh as much as the life of a single one of our brave soldiers. The rigorous accomplishment of duty is the emanation of a high *Kultur*, and in that, the population of the enemy country can learn a lesson from our army."

Regarding the limitations imposed upon the conduct of belligerents by the laws of humanity, German military writers have long held to the view that war is by its very nature inconsistent with humanity and cannot be prosecuted humanely if success is to be achieved. The German manual of war, prepared by the General Staff, shows a disposition to belittle the efforts which have had as their purpose the humanizing of war and more than once it refers to those who have taken the leadership in such movements as misguided sentimentalists and theorists whose humanitarianism has "frequently degenerated into sentimentality and flabby emotion" (*Sentimentalität und Gefühlsschwärmerei*) which are in "fundamental contradiction with the nature of war and its object." Often the only true humanity, it asserts, "lies in a ruthless application of them" and soldiers would do well to guard against exaggerated humanitarian notions regarding the object and purpose of war. This note of warning had already been sounded years before by von Moltke in the letter to Bluntschli, referred to above, where the great marshal said "the great kindness in war is to bring it to a speedy conclusion." German text writers and militarists frankly admit that there are limits in respect to the methods and instrumentalities which may be employed by a belligerent but the theory of military necessity which they uphold unfortunately reduces the limitations to a nullity in many cases. The Hague Conventions inferentially, and nearly all text writers expressly, recognize that there are circumstances under which a belligerent may disregard the limitations set by the established rules of international law but they are all, at least outside Germany, in substantial agreement that the

plea of necessity is no excuse for overriding the limitations of the law unless its observance would actually imperil the existence of the belligerent. In short, it must be a case of self-preservation and the injury or danger must be such as will not admit of the delay which the normal course of action would involve. Mere considerations of convenience or strategical interest such as led Germany to send her army through Belgium are not sufficient to justify a belligerent in overriding the law. The German manual, as well as many German text writers, draws a distinction between what they call *Kriegsraison* and *Kriegsmanier*. The former, which may be translated as "the reason of war," allows a belligerent to employ any means or methods which are necessary to the attainment of the object of the war even though they are forbidden by the customs and usages of war (*Kriegsmanier*). In short, the limitations set to belligerent conduct by the laws of war may be disregarded whenever their observance would hinder or defeat the attainment of the object of the war. Such a distinction is condemned by The Hague Conventions, by the war manuals of the United States, Great Britain and France and by practically all writers outside of Germany.

The German war manual affirms that "every means may be employed to overcome the enemy, without which the object of the war cannot be attained . . . all means which modern inventions afford, including the most perfect, the most dangerous and those which destroy most quickly the adversary *en masse;* and since these latter result most promptly in the attainment of the object of the war they must be considered, as indispensable, and, all things considered, they are the most humane." Nevertheless, it admits that "chivalrous and Christian spirit, the progress of civilization and especially the knowledge of one's own interest have led to *voluntary relaxations* the necessity of which has received the tacit assent of all states and of all armies." Von Moltke from whom the General Staff draws so many of its ideas, laid down the inadmissible principle that "the great benefit in war is that it should be terminated as soon as possible." For this purpose it is permissible to "employ all means except those which are positively condemned" (*dazu müssen alle, nicht geradezu verwerfliche mittel freistehen*). In short, the test of the legitimacy of an instrument or measure is not so much its humanity but its effectiveness in enabling a belligerent to bring the war to a speedy and successful termination. This view has recently found advocates in Generals Bernhardi, von Hindenburg, von Bissing and other German militarists and it is apparently the view on which the German government proceeded during the late war. Thus the Imperial Chancellor said in the Reichstag in March 1916: "Every means that is calculated to shorten the war constitutes the most humane policy to follow. When the most ruthless methods are considered best calculated to lead us to victory and a swift victory, then they must be employed." Again in a note of 31 Jan. 1917, handed to the Secretary of State of the United States, the German Ambassador at Washington justifying Germany's repudiation of the pledges given to the American government regarding the sinking of merchant vessels (see SUBMARINE WARFARE) and defending the resumption of unrestricted submarine warfare, said: "The German government is now compelled to continue the fight for existence, forced upon it, *with the full employment of all the weapons which are at its disposal.*"

The employment of new and powerful agencies of destruction or of new methods of attack is, of course, not to be condemned merely because they are new or because they are more effective than those formerly used. The true test of their lawfulness is whether they are humane, whether they can be employed without inflicting superfluous injury upon those against whom they are used, whether in the language of the Declaration of Saint Petersburg the effect is to "uselessly aggravate the sufferings of disabled men." The doctrine of the German militarists that the test is effectiveness, that is, it is permissible to employ any instrument the use of which will contribute to the attainment of the object of the war and especially the shortening of its duration, cannot be accepted. It is in fact rejected by nearly all military codes and is condemned by The Hague Conventions, and by practically all text writers outside Germany. Turning now to the practice during the late war, we find that nearly every instrument, agency or method of destruction forbidden by The Hague Conventions and the customs of war was employed by one or the other of the belligerents, and that Germany has the unenviable distinction of having made use of them all. Each belligerent accused the other during the early months of the war of making use of both dumdum and explosive bullets and each vigorously denied the charge. Each claims to have captured on the field of battle large quantities especially of dumdum ammunition, and the French admitted that the Germans may have found such ammunition at Longwy, but asserted that it had been stored there before the war for target practice and that none of it was ever used against the Germans. The German emperor addressed a protest to the President of the United States against the alleged use by the English and French of bullets forbidden by The Hague Convention, and the President of France in a telegram to Mr. Wilson denied the charge and stated that the emperor's protest was designed to deceive the people of the United States. The French government also stigmatized as "the grossest forgeries" what purported to be facsimiles of labels found on French ammunition boxes showing the presence of dumdum bullets. Count von Bernstorff, German Ambassador at Washington, filed a complaint with the Department of State, charging that bullets forbidden by The Hague Convention were being manufactured in the United States for shipment to England for use by the British forces. The department made an investigation of the charge and informed Count von Bernstorff that no evidence could be found in support of his charge. Nevertheless, it added, that if evidence could be furnished that any firm or individual in the United States was engaged in the manufacture of such ammunition for shipment to England or France, it would be glad to have the proof. None was ever furnished. While prac-

tically every belligerent accused the other of using forbidden bullets the evidence at hand does not indicate that any general use was made by any belligerent of the particular type of bullet prohibited by The Hague Convention, although there may have been occasional uses of it with or without the authority of the government whose troops were guilty of it.

A substance which, however, was used by all belligerents on an extensive scale and the lawfulness of which was questioned in many quarters was asphyxiating and even poisonous gases. This new agency of attack appears to have been first employed by the Germans on 22 April 1915, at the second battle of Ypres. The Germans charged that it had already been used by the British troops but there is no evidence in support of the charge. Several methods were employed in generating the gases thus used, the most common of which was to ignite the substance in the first line trenches and permit the wind to blow the fumes toward the enemy. The opinions of chemists regarding the composition of the gases first used differed but there was a general agreement that one of the ingredients was chlorine. During the same month what was described in the press dispatches as "poisonous" gases was used by the Germans against the Russians on the Eastern front, the gases being generated, as on the Western front, by means of steel cylinders placed in the trenches. The British, French and Russian troops naturally considered that retaliation in kind was legitimate and accordingly they very early organized "gas detachments" and before the end of the year 1915 apparently all belligerents were resorting to this new mode of attack. Whether such mode of warfare is a violation of The Hague Convention would seem to depend mainly on the character of the gases employed and the effect which they produced on the men against whom they were launched. According to the reports of British and French military commanders, medical experts and newspaper correspondents who saw the victims of these attacks the effect was to produce agonizing and prolonged suffering; that the result was not merely to disable the men who inhaled it but to inflict permanent injury upon those who did not succumb on the field or cause them to die a painful and lingering death. Alexander Powell, an American newspaper correspondent who saw many of the victims on the Western front, stated that the inhalation of the gases produced painful and agonizing strangulation accompanied by blackened and distorted features. Stanley Washburn, a London newspaper correspondent who saw hundreds of the victims in the hospitals on the Eastern front, stated that the gas caused blood congestion and the formation of clots not only in the lungs but in the blood vessels and arteries and that those who lingered on and finally succumbed suffered a torture which the days of the Inquisition could hardly parallel.

The Germans, however, at first denied that such effects were produced by the use of gas and asserted that the suffocation of the enemy in this method was no more cruel or inhuman than the bombardment of trenches or the flooding of the enemy's camps with water as the Belgians had done at Nieuport. The evidence, however, was so strongly to the contrary that the Germans later preferred to rest their defense on the ground of reprisal against the enemy for having first resorted to this method of attack. As stated above, however, no evidence has been produced in support of their charge that the English were the first to make use of this agency of attack. The Germans might have argued that what The Hague Convention prohibited was *projectiles* and not generating tanks or cylinders; and that it prohibited only *poisoned weapons* and not the use of noxious or poisonous fumes generated by apparatus in the trenches and which reach the enemy by being blown against him by means of the wind. But to this argument it might be replied that The Hague Convention forbids the use of poison in any form and it also forbids not only the employment of arms and projectiles but also of *material* calculated to cause unnecessary suffering. At the time, the Conference did not foresee the invention of other agencies than bombs or projectiles for the diffusion of asphyxiating or deleterious gases and consequently the language employed in the Convention was directed only against the instruments then in use. It is hardly probable that had the Conference foreseen the invention of other instruments than bombs or projectiles for diffusing such gases it would have failed to formulate its prohibition in such language as to embrace the methods of attack devised by the Germans and subsequently adopted by the other belligerents as a measure of reprisal and defense.

Not only did the Germans first make use of asphyxiating and poisonous gases in the manner described above, but at the same time, according to the report of Sir John French, on the battle of Ypres, they employed explosive *shells* charged with deadly asphyxiating gases. Later shells charged even with poisonous gases were employed on an extensive scale by the Germans. Whatever may be the opinion regarding the legitimacy of the method of attack by means of gas generated from tanks or cylinders and wafted against the enemy by the wind, there can be no difference of opinion in regard to the use of explosive shells which emit such gases. The Hague Convention expressly forbids the use of such weapons.

Still another instrumentality invented by the Germans and first used by them in their operations against Verdun in March 1916, and against which there was more or less protest, was the "liquid fire projector" or "flame thrower" (*Flammenwerfer*)—a small tank filled with a highly flammable composition liquid under high pressure and strapped to the back of the soldier using it. Connected by a swivel joint with the bottom of the tank was a hose pipe with a valve and a nozzle to which was attached an igniting apparatus. By opening the valve and igniting the composition a stream of fire with intense heat could be projected a distance of 20 or 30 yards. The effect against those upon whom it was directed was deadly, the victims sometimes being burnt to a crisp. The French government denounced it as an "abominable method" of attack, in contravention of all the undertakings solemnly given by the German government to the other powers and in "contempt of all the sentiments of humanity." No government, it added, could

remain defenseless against such refinements of barbarity without endangering the safety of its own troops and accordingly it was announced that the French government would adopt retaliatory measures. The employment of such an instrument is not expressly forbidden by The Hague Convention unless it belongs to the category of "material calculated to produce superfluous suffering," which may be seriously doubted. Owing to its very limited radius of action and the visibility of the flame it is always possible for the enemy to avoid the effect, which is not the case where the instruments employed are explosive projectiles or shells charged with gases.

A serious charge made by General Botha against Lieutenant-Colonel Franke, Commander of the German forces in Southwest Africa, was that he had given orders to poison the wells of Swakopmund in January 1915, before evacuating the town. This was done by placing bags of arsenical cattle dip in the wells. General Botha protested on the ground that the use of poison was forbidden by The Hague Convention and he threatened that if the practice were persisted in he would hold the officers concerned responsible and would be compelled to resort to such measures of reprisal as might seem advisable. Colonel Franke admitted that cattle dip had been put into the wells by his orders but asserted that they had been carefully marked by warning notices, so that it was not a case of poisoning, since poisoning implies the *secret* adding of matter injurious to the health of human beings. It was, in short, nothing more than the "effecting a change in the natural condition of the water in order to deprive the enemy of the use of this means of existence." It is admitted by all the authorities that the cutting off of the water supply upon which the armed forces of the enemy are dependent is entirely legitimate and the diversion of streams which supply a besieged place is not an unusual method of compelling the place to surrender. It is also admitted by some authorities that it is legitimate to pollute the water supply of the enemy as by throwing the carcasses of dead animals into it. This was done by General Johnston during the Civil War and by General Cronje during the Boer War. Such a measure would seem to differ little in principle from introducing poisonous substances in wells provided they are carefully marked as Colonel Franke claims to have been the case with the wells at Swakopmund. It should be remarked, however, that the effect if not the purpose of the German measure was not to deprive the armed forces of the enemy of his water supply but to cut off the supply of the civil population which was left behind after the Germans had evacuated the place. It is very doubtful whether a belligerent has a lawful right to punish in this way the peaceable civil population of the territory evacuated by him. The American 'Rules of Land Warfare' (Art. 177) go to the length of interpreting the prohibition of The Hague Convention in respect to the use of poison to include "the deliberate contamination of sources of water by throwing into the same dead animals and all poisonous substances of any kind."

A somewhat similar case was the action of the Germans in poisoning certain wells in the Somme region of France, during their retreat in the spring of 1917 and with having filled others with dung and creosote soda. Charges were also made against German aviators for having dropped poison candy in certain towns of France over which they flew and the mayor of Vadelaincourt felt obliged to issue a proclamation warning the inhabitants against eating candy thus dropped.

Falling within the category of forbidden instrumentalities is the employment of savage troops. In July 1915 the German Foreign Office issued a white book in which it protested against the employment in Europe, contrary to international law, by England and France of large numbers of colored troops from Africa and Asia: Gurkhas, Sikhs, Pathans, Sepoys, Turcos, Moroccans, Sengalese, etc. These people having, it was said, grown up in countries where war was still conducted in its most savage forms, had brought to Europe the custom of their countries and had in fact committed atrocities which set at defiance not only the recognized usages of warfare, but of civilization and humanity. Among the evidence submitted in proof of the charge were depositions of witnesses, *facsimile* reproductions of extracts from diaries of French and Belgian soldiers and photographs of mutilated bodies, amputated ears, and the like. In some cases, it was alleged, war trophies consisting of the severed heads, ears and fingers of German soldiers were found in the pockets of captured Turcos or strung around their necks like beads. The Hague Convention does not forbid the employment of colored troops but it lays down the requirement that militia and volunteer forces to be entitled to treatment as lawful belligerents must conduct their operations in accordance with the laws and customs of war. Manifestly this condition is none the less essential in the case of regular troops. There is a general agreement among writers on international law that it is not permissible to employ savages or semi-barbarous peoples as soldiers, but there is no agreement as to what particular races fall within this category. Indians were employed by the English and French in the colonial wars of North America, thus calling out the famous protest of Lord Chatham; Bashi-Bazouks and Circassians were used by the Turks during the Russo-Turkish War of 1877–78; Kaffirs were armed for defense by the British and later were regularly employed as soldiers during the Boer War and certain Manchurian bands known as Chunchuses were made use of by the Japanese during their war with Russia in 1904–05. African troops were used in Europe by the French in 1859 and again in 1870–71 and in both cases the governments against whose troops they were used protested. Regarding the conduct of African troops in the late war it is probably safe to say that there were individual instances of atrocities but from the best information available it does not appear that such cruelties were common. Concerning the conduct of the Indian troops there appears to have been no ground for complaint. Valentine Williams, correspondent of the London *Daily Mail*, says in his book 'With Our Army in Flanders': "They have proved themselves to be a smart

and soldierly body of men, clean, well-mannered, and like all good troops, most punctual about saluting." Again he says: "They are fierce and terrible in their charge but are merciful to their prisoners and there is none of that slaying of prisoners that has eternally besmirched the German escutcheon."

Turning now from instrumentalities and weapons to methods and practices forbidden either by The Hague Conventions or the customary rules of warfare we find many examples during the present war of non-conformity to the law and custom. One of the most common and reprehensible of such practices was the conduct of German military commanders in using their civilian captives as screens or shields to protect their own troops against attack by the forces of the enemy or by the civil population. In many towns and villages occupied by the Germans large numbers of the inhabitants, men, women and children, were seized and placed in front of the German firing lines and sometimes were compelled to march long distances at the head of columns of German troops. The evidence in proof of this charge is so abundant in quantity and so reliable in character as to leave no doubt whatever in the mind of the investigator that this barbarous practice was resorted to on numerous occasions particularly in Belgium and France and to a less extent on the Russian and Italian fronts and in Serbia. In some cases the Germans approached their objects of attack and even attacked the forces of the enemy from behind columns of civilians or military prisoners. Such a cruel and barbarous expedient is not only contrary to the customs and usages of civilized warfare but it is expressly forbidden by The Hague Convention itself, which declares that the inhabitants of occupied territory may not be compelled to take part in the military operations against the troops of their own country.

Another practice frequently resorted to by German commanders was the taking of hostages from among the inhabitants of occupied territory and in some instances even the putting of them to death. They appear to have been taken for a variety of purposes, the most common of which was to insure the good behavior of the civil population. Generally their seizure was accompanied by a threat to shoot all or a certain number of them in case acts of hostility were committed and in some cases the threats were actually carried out. The persons taken as hostages were usually the leading citizens of the community: the mayor, members of the city council, senators or deputies, sometimes the schoolmaster and frequently the parish priest. Sometimes they were shut up in buildings as prisoners, sometimes they were led through the streets and compelled to warn their fellow citizens of the consequences which would result from hostile acts and considerable numbers were deported to Germany where they were confined as prisoners or held to forced labor.

The practice of taking hostages is an old one and in early times was resorted to as a means of insuring the execution of treaties, armistices and other agreements. During the Franco-German War of 1870–71 it was resorted to on a large scale by the Germans for the purpose of securing their troops against attack by those whom the Germans considered to be *francs-tireurs*, for insuring the obedience of the inhabitants and to compel the payment of community fines and the raising of contributions. It was also during this war that hostages for the first time were placed on railway trains for the purpose of protecting them against derailment either by the troops of the enemy or the civil population. This latter expedient was also resorted to for similar purposes by the British during the Boer War. Mr. Bryce in the House of Commons criticized the action of Lord Roberts and Earl Kitchener as being "contrary to The Hague Convention and the general usages of civilized warfare," but it was defended by Mr. Broderick, Secretary of State for War, as a legitimate war measure. Writers on international law have generally condemned the practice as being analogous to the placing of innocent civilians in the front of battle in order to induce the enemy's troops to withhold their fire. The German war manual, as might be expected, defends the conduct of German commanders in resorting to this practice in 1870–71, because it was effective, although it frankly admits that "every writer outside Germany has stigmatized it as contrary to the law of nations, and that it was a harsh and cruel measure."

Regarding the legitimacy of the taking of hostages for the general purpose of insuring the good behavior of the civil population there is a difference of opinion among the authorities on international law. The Hague Conventions do not deal with the matter further than to declare that "the lives of private individuals must be respected" and that "belligerents are forbidden to compel the nationals of the adverse party to take part in the operations of war directed against the enemy." Whatever may be one's opinion regarding the lawfulness of the practice there is no difference of opinion among the authorities as to the treatment to which hostages are entitled. All are agreed that hostages are both "private persons" and "prisoners," not combatants. The Hague Convention, as stated above, declares that the lives of private persons must be respected, and as to prisoners it declares that they shall be "humanely treated." They cannot, therefore, be put to death except for crime. Nevertheless, as stated above, the Germans in a number of instances put to death hostages on account of acts of hostility alleged to have been committed by the civil population. The most flagrant instance of the kind was the shooting of more than 90 hostages at Les Rivages, a suburb of Dinant, for the act of certain civilians in firing upon a detachment of German troops who were engaged in constructing a pontoon bridge. The German white book, 'The Belgian Peoples' War,' admits that hostages were shot there and elsewhere but undertakes to justify this extreme measure on the ground that the taking of hostages would often be without effect if the belligerent taking them were not allowed to inflict the death penalty for violation of the conditions for which they are taken. In early times the right to put hostages to death was asserted, but no modern writer outside Germany can be found to defend this cruel practice, and it does not appear that in fact it

has been resorted to in any war of modern times, until the ancient practice was revived by the Germans during the late war.

Another practice forbidden by the laws of war is the devastation of the enemy's country except when absolutely required as a measure of military necessity. This long-established rule of civilized warfare, like so many others, was flagrantly violated by the Germans during the late war. The most notable instance of the kind was the frightful devastation of a region on the Somme front in France in March 1917 before the Germans retreated from it. The territory evacuated was, according to German accounts themselves, "converted into a veritable waste and left an empire of death." Not only were the roads, bridges, culverts and other objects of military value destroyed, but hundreds of private houses were burned, fences destroyed, shade trees cut down, orchards leveled, vineyards uprooted, dwellings pillaged and their contents destroyed or carried away, wells polluted and poisoned, banks robbed, churches desecrated and despoiled of their relics, and even the tombs of the dead broken open. "Never before in the history of the world," said the American Ambassador who visited the devastated region and made a report to the Department of State, "had there been such a thorough destruction wrought by either a vanquished or a victorious army." Mr. Penfield, American Ambassador to Vienna, made a similar report.

The German military authorities attempted to justify the act as a measure of military necessity; the territory in question was to be a military zone and it was, therefore, necessary to destroy trees, houses, vineyards, etc., to prevent the enemy from using them for purposes of concealment. As stated above, all authorities on war law are agreed that a belligerent may destroy objects likely to be of military value to the enemy into whose hands they may fall and he may level houses and trees for the purpose of bombardment to prevent the enemy from concealing himself behind them. He may even destroy mills, granaries and growing crops for the purpose of depriving the enemy of the means of subsistence which they afford. It was on this theory that Sheridan's devastation of the Shenandoah Valley during the Civil War has been defended by some writers on international law. But it is clear that the German devastation of the Somme region went much further than this, including as it did the cutting down of orchards and vineyards which lay not within a probable zone of attack but in a region from which the Germans were retreating. In any case, the wholesale pillage of private houses, desecration of the churches, deportation of the inhabitants, etc., could have subserved no immediate military end. Much of it appears to have been done in the spirit of wantonness and revenge and was entirely unjustified. "The measure of permissible devastation," say the American 'Rules of Land Warfare,' "is found in the strict necessities of war. As an end in itself, as a separate measure of war, devastation is not sanctioned by the law of war. There must be some reasonably close connection between the destruction and the overcoming of the enemy's army." (Art. 334). The British and French manuals lay down essentially the same rule and this is the view of the great majority of the text writers on international law.

Numerous charges and counter-charges have been made by each belligerent against the other of misusing the white flag, and as in other cases the Germans appear to have been the most frequent offenders. The abuse consisted in hoisting the flag as the token of a desire to surrender and of firing upon the enemy when he advanced to take them as prisoners or to confer with the commander. In some cases the white flag was raised by the enemy for the purpose of enabling him to bring up his reserves. The Germans were many times charged with this offense. The employment of the white flag and the flag of truce for such purposes has long been forbidden by custom and it is expressly condemned by The Hague Convention respecting the laws and customs of war on land. (Arts. 23j and 32–34). The use of either flag for the purposes mentioned above is not regarded as a legitimate ruse of war but an act of gross perfidy and treachery. A ruse of war to be legitimate must be one which does not involve perfidy or breach of faith, such, for example, as the allowing of bogus dispatches to fall into the hands of the enemy, deceiving the enemy by means of false signals, sham works, dummy artillery and the like.

In several instances charges and countercharges were made by belligerents on one side against the enemy for attacking in his adversary's uniform. International law does not forbid the use of the enemy's uniform or his military insignia as a ruse of war, but The Hague Convention prohibits their *improper* use without indicating what is and what is not a proper use. Many writers on international law hold that it is legitimate to wear the enemy's uniform for the purpose of approach, but that before attacking he must put on his own uniform and reveal his true identity. Other authorities, however, take the position that it is not allowable for any purpose, not even for the purpose of approach, on the theory that the distinction between the use of the enemy's insignia prior to beginning the attack and after beginning it is arbitrary. Most military manuals now condemn the use of the enemy's uniform for purposes of deceit, but allow it in case of necessity, as, for example, where on account of lack of a sufficient supply of clothing the soldiers are dependent upon uniforms captured from the enemy. In that case if the uniforms are altered or distinctly marked so as to disclose the true character of the wearers there is no treachery and the practice is unobjectionable.

A somewhat similar question was many times raised during the late war by the action of merchant vessels or warships in flying the enemy's flag or the flag of a neutral power. The action of the master of the ill-fated *Lusitania* and other British merchantmen in hoisting the American flag in order to deceive German submarines evoked a protest from the American government. As is well known, the German cruiser *Emden* flew the Japanese flag on the high seas for many weeks, and even entered neutral ports and obtained supplies under false colors. The use by a warship of the enemy's

flag for the purpose of deception has generally been regarded as a legitimate ruse, subject to the condition that before beginning the attack the ship must display its true colors. That is to say, a warship may sail and chase under false colors but it cannot make an attack until its own flag has been raised. The prize regulations of many countries lay down this rule, but as in the case of the use of the enemy's uniform, the distinction between approaching and attacking is more or less arbitrary, and writers are not lacking who condemn the use of the enemy's flag for any and all purposes. The Institute of International Law in 1913 adopted a rule forbidding the use of false flags, uniforms or insignia of whatever character.

As regards the use of neutral flags by *warships*, opinion is still more divided, although the practice has often been resorted to, e.g., by the commanders of the *Alabama* and the *Florida* during the Civil War. It has also been stated that the American warship *Charleston* was flying the Japanese flag at the time it captured Guam during the Spanish-American War. As to the use of neutral flags by merchant vessels of belligerent nationality for the purpose of deceiving the enemy and escaping attack there appears to have been no instance prior to the present war of such use, doubtless because merchant vessels have not heretofore been regarded as liable to attack and destruction and hence the necessity of resorting to ruses of this kind rarely existed. In the course of the controversy between the American and British governments on account of the action of the *Lusitania* in hoisting the American flag to escape destruction by a German submarine, the British Foreign Office contended that the use of neutral flags as a ruse of war was a well-established practice and it pointed out that British law allowed British merchantmen to use neutral flags for the purpose of escaping capture. The American government contended that there was a distinction between the occasional use of a neutral or enemy flag under the stress of immediate pursuit or with a view to deceiving an approaching enemy, on the one hand, and a general authorization of a belligerent of its merchant vessels to fly the flag of a neutral power within certain positions of the high seas which are presumed to be frequented by hostile warships. In short, it did not deny the right of a British merchant vessel to use the American flag in particular instances to escape destruction but it did contest the right of the British government to authorize its merchant vessels generally to fly the American flag since such general use would expose American vessels and their passengers to danger.

Such are some of the methods and practices of war which are either forbidden by international law or concerning the legitimacy of which there is doubt or difference of opinion among the authorities. The list is by no means exhaustive. Many others were resorted to during the late war, especially by German military and naval commanders, but the limits of this article do not permit a consideration of them.

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WAR, Laws of. See LAWS OF WAR.

WAR, Prisoners of. See PRISONERS OF WAR.

WAR, Prize of. See ADMIRALTY AND MARITIME JURISDICTION; CONTRABAND; NEUTRALITY; PRIZE; PRIZE COURTS AND PRIZE JURISDICTION; PRIZE MONEY.

WAR, Rules of. See INTERNATIONAL LAW.

WAR COLLEGE. See ARMY WAR COLLEGE.

WAR DANCE, a dance formerly common among the American Indians, engaged in by the warriors of a tribe before a warlike expedition. The men put on their head-dress and war paint, flourished their weapons and circled about to the noise of crude drums.

WAR DEMOCRATS, those members of the Democratic party who during the Civil War of 1861–65 supported President Lincoln and the Union cause. The chief figure of the group was Stephen A. Douglas, who pledged his support to Lincoln in person on 14 April 1861. Douglas died 3 June 1861 and the War Democrats were bereft of a national leader. In the 37th Congress the Democrats nominated no candidate for Speaker and joined the Republicans in voting war supplies of men and treasure. In the elections of 1861 it was evident that there was a lack of harmony in the party, some like Dickinson, in New York, and Tod, in Ohio, heading a coalition movement, others nominating their own candidates and while approving the war in their platforms, severely criticized several of Lincoln's policies, especially the suspension of habeas corpus. In 1862 the effect of the Emancipation proclamation was to estrange the War Democrats from the Republicans. In 1864 Andrew Johnson was nominated for vice-president by the Republicans, and at Chicago the regular Convention nominated McClellan and Pendleton, thus the War Democrats were divided in two factions. The election of Lincoln saw the party without influence and its numbers reduced to impotence. Consult Rhodes, James F., 'History of the United States' (New York 1905); and Stanwood, E., 'History of the Presidency' (1898).

WAR-EAGLE, any eagle connected with war or the idea or war in symbolism or otherwise, as the imperial eagle (*Aquila mogolnik*) adopted as a standard first by a favorite legion and later by Roman troops generally; whence the symbol spread to the national insignia of many European countries. The war-eagle of the North American Indians, whose feathers ornamented their war-bonnets and other accoutrements, was the golden eagle (*A. chrysætus*). See EAGLE.

WAR GAME. See KRIEGSPIEL.

WAR GARDENS. Among the problems which faced the world at the outbreak of the World War there was none more vital than that of food supply. Substitutes were found for many of the articles needed to carry on the war. Inventive chemists discovered alloys or compositions which could be made to serve in

place of metals which were indispensable. In some countries they began to make clothing from materials which had never before been used for that purpose. But for food there could be no substitutes and it became necessary not only to keep up the usual supplies but if possible to increase the output. On this account efforts were made to discover hitherto undeveloped sources of food production. While every aid was given to the established farmer to speed up and add to the nation's food resources, there was a limit to what he could do, due particularly to his increasing difficulties as the war progressed in getting help. Here then was the opportunity, in fact it amounted practically to a necessity, for the development of a new branch of agriculture. The result was the "city farmer." Starting in 1917 when the entry of the United States into the war made the food situation acute, the war gardeners of the United States had increased by the following year into a grand total of 5,285,000, which was an increase of 1,785,000, or 51 per cent over the number who went into the home food production work in the first year of the National War Garden Commission's nation-wide campaign. Before 1918, too, the message of "Food F.O.B. the Kitchen Door" had spread beyond the bounds of the United States, and other countries were coming here for information as to how much universal interest had been aroused in home gardening and what methods of instruction and assistance were given to the workers. The National War Garden Commission was organized early in the spring of 1917 for the purpose of stimulating and encouraging the cultivation of all that land which was lying idle in the form of backyards and vacant lots by the millions in cities, towns and villages all over the country. Those who started the movement realized that here was a great untapped source of food wealth; and that if all this "slacker land," or even a large percentage of it, could be put to work there would be opened up an unlimited addition to the fighting resources of America and her Allies. The results were remarkable and have far outstripped the early anticipations of the founders of the scheme. Like the forces of Roderick Dhu which rose unseen from the heather all over the mountain side at his whistle shrill, so the vast army of war gardeners all over the United States from coast to coast rose at the call to them to "Sow the Seeds of Victory." They formed a mighty force and added about $350,000,000 to the food wealth of the nation in 1917. In the following year they had increased vastly in numbers and the product they raised was valued at more than $500,000,000. Co-operation was the means which made the war garden compaign a success. Patriotic and unselfish assistance was given to the commission in spreading widecast its call to the back yard and vacant lot farmer. Organizations of all kinds, committees and women's clubs; State, city and county officials; industrial and manufacturing concerns, big and small; banks and business houses; chambers of commerce and other trade bodies; railroads and mining companies; school and college superintendents and instructors; city park departments, bureaus of municipal research, city improvement associations, even tenement-house inspection services in some cases: these and many others co-operated loyally in getting the message home to the people, and through their local committees organized and started the good work. The war gardens of the United States proved their worth in many ways. They added a vast total to the food wealth of the nation. But they accomplished much more. They resulted in the saving of transportation facilities, and by making the consumer also a producer released thousands of freight cars for more essential war work. At the same time this also freed many workers for other service.

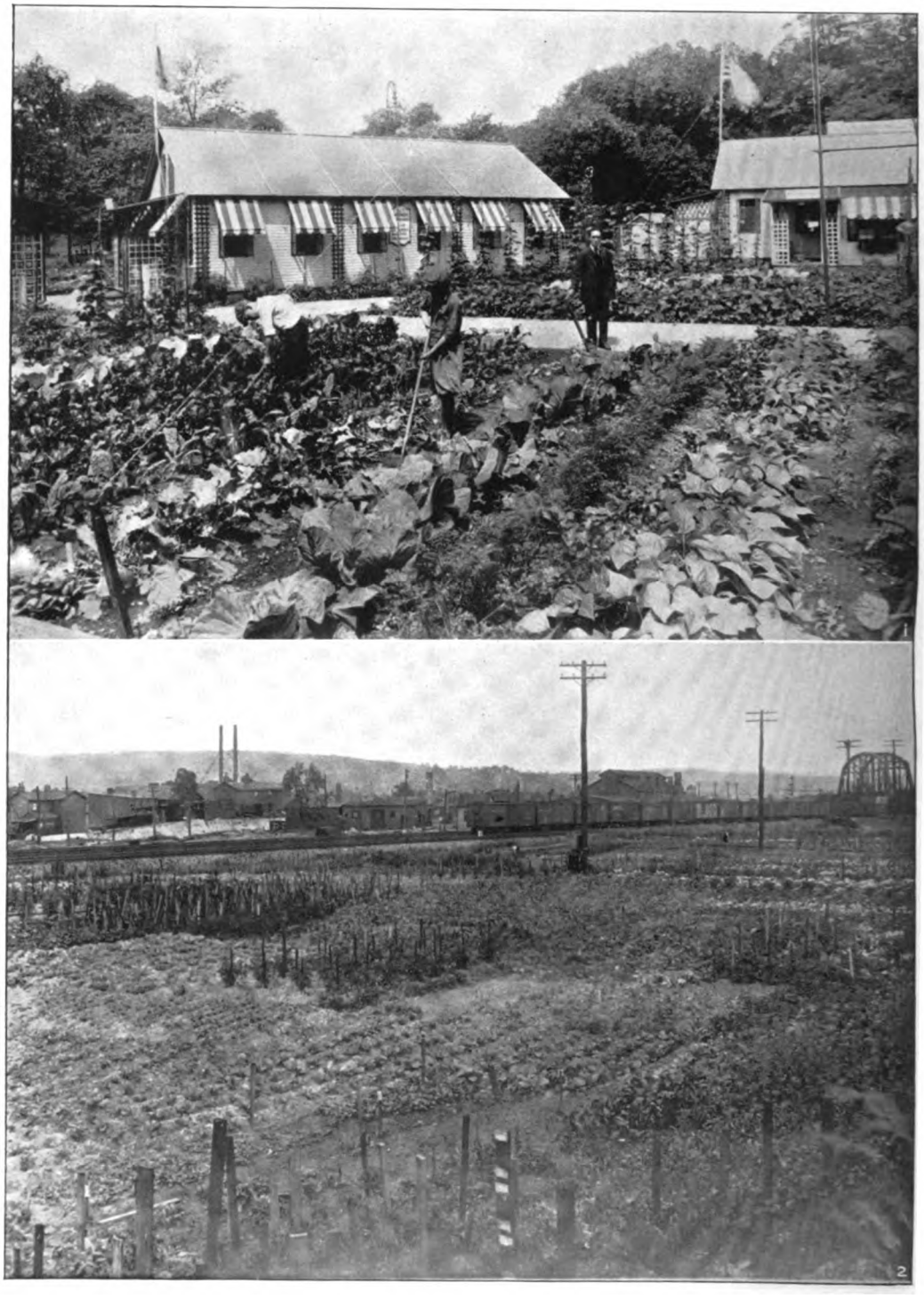
Another important benefit has been the lesson of thrift which the war garden has inculcated in the minds of millions of American people. This has had its effect and made easier the work of the government in urging the purchase of Liberty Bonds and thrift stamps. Not only was the lesson there, but the war gardener had been able to save a considerable amount of money which he would have spent at the market. When the call came, therefore, to buy government certificates the home food producer found that he was able to pay a larger monthly instalment than otherwise would have been the case, because he was growing $10 to $20 worth of vegetables in his little back yard or vacant lot plot every month. The war garden has come to stay — that is the testimony which has come from many sources; and it is one of the ways in which the work proves its value.

Employers of labor have found the war garden one of the best means of helping to keep their men contented and of stabilizing labor. Through their mutual interest or similar departments they have furnished tracts of land for their workers, in many cases also preparing it for them and providing the fertilizer and seed or selling it to the men at cost and on easy instalments. This has worked to the benefit of both employer and employee. The satisfied worker is a better worker. He is not so likely to leave if he happens to hear of what he believes a better opportunity elsewhere. He realizes that his employer takes an added interest in his welfare and he appreciates this human touch. While the workers at hundreds of plants have thus been helping themselves and adding to their incomes, they also have been assisting their country, for frequently they are at congested industrial centres where every saving of freight space is doubly valuable. The wives and children have gone out into the gardens and helped to care for them. In addition the women have been encouraged to conserve as much of the garden product as possible; and this move the manufacturers have stimulated by fairs and contests at which prizes were given for the best display of vegetables and for the finest canned goods. The National War Garden Commission in 1917 and again in 1918 added national recognition to those contests, as well as to many held at county fairs and other war garden exhibits, by its National Capitol Prize Certificate which went to blue ribbon winners.

Plans for the big new cities which have gone up almost as if by magic around new shipyards and munition plants include as one of their features little gardens for the workers. "Every Garden a Munition Plant," one of the slogans which the Commission sounded throughout the country, has an added significance when

WAR GARDENS

1 War Gardens of the American Rolling Mills Company's Employees, Middletown, Ohio
2 War Garden of Employees of the Oliver Chilled Plow Co., South Bend, Ind.



1 Demonstration War Garden on Boston Common
2 War Gardens alongside the Pennsylvania Railroad at East Liberty, Ohio

applied to conditions like these. While the guns and the ammunition, the shells and the ships are being turned out in the nearby factories and yards, the men are growing "ammunition" in their home plots.

CHARLES LATHROP PACK,
President of the National War Garden Commission.

WAR GOD. Most ancient religions had their war gods, and in America, before the Spanish conquest, the Mexican war god was specially worshipped, with human sacrificial rites. Ares and Mars were the war gods of Greece and Rome respectively. The Jews evidently regarded Jehovah as presiding over their battles, and David is represented in 1 Samuel xvii, 45, as telling the Philistine that he comes "in the name of the Lord of hosts, the God of the armies of Israel." The same conception exists in some degree among Christian nations, and in the Great World War the kaiser and other prominent Prussians were fond of evoking the approval of their deity.

WAR INDEMNITY, the sum of money paid by the defeated country in an international war to the victorious government. The largest amount demanded in this way previous to 1919 was $1,000,000,000, which France was compelled to pay Germany after the war of 1870–71. In the war of 1866 Prussia took from Austria and her allies a war indemnity of $41,750,000, besides $3,750,000 requisitioned during the campaign. The war between Japan and China covered about nine months and the amount paid by the latter nation was $185,000,000. For the Turko-Russian War of 1877, Russia demanded $701,000,000, but her claim was reduced to $160,000,000. Great Britain has received two indemnities from China, the first, in 1840, being $25,000,000, and the second, in 1860, about $10,000,000. The sultan of Turkey was forced by the powers to reduce his claims of $50,000,000 on Greece at the close of the war of 1897 to $10,000,000. The settlement of war claims between the United States and Spain at the end of the war of 1898 was unique. The Spanish-American War lasted four months, and cost the United States $150,000,000. The Spaniards were defeated in every battle on sea and land, and finally sued for peace. A treaty was signed by President McKinley and by the queen regent of Spain in 1899 by the terms of which the United States relinquished all claims for indemnity of any kind, and agreed to send back to Spain, at its own cost, all Spanish soldiers taken prisoners, with their arms. The United States further agreed to pay to Spain the sum of $20,000,000. On her part, Spain was to relinquish all claim of sovereignty over Cuba; to cede to the United States the island of Porto Rico and other islands then under Spanish sovereignty in the West Indies; the island of Guam, in the Ladrones; and the archipelago known as the Philippine Islands. In this case it would appear that the victors paid for their success. At the close of the trouble between China and the powers, growing out of the Boxer uprising in 1900, it was agreed that China pay the powers 450,000,000 taels as an indemnity. These settlements are petty compared with that exacted from Germany under Section VIII of the Treaty of Versailles signed 28 June 1919 according to which "Germany undertakes to make compensation for all damage caused to civilians, the total obligation to be determined by an Inter-Allied Reparation Commission. As an immediate step toward restoration, Germany shall pay within two years 20,000,000,000 marks in either gold, goods, ships or other specific forms of payment. The Commission may require Germany to give from time to time by way of guarantee issues of bonds or other obligations to cover such claims as are not otherwise satisfied. In this connection and on account of the total amount of claims, bond issues are presently to be required of Germany in acknowledgment of its debt as follows: 20,000,000,000 marks gold, payable not later than 1 May 1921, without interest; 40,000,000,000 marks gold, bearing 2½ per cent interest between 1921 and 1926, and thereafter 5 per cent with a 1 per cent sinking fund, payment beginning in 1926, and an undertaking to deliver 40,000,000,000 marks gold, bearing interest at 5 per cent under terms to be fixed by the Commission."

Germany was also obliged to undertake "to replace ton for ton, and class for class, all merchant ships or fishing boats lost or damaged owing to the war, and to cede to the Allies all German merchant ships of 1,600 tons gross and upwards, one-half of her ships between 1,600 and 1,000 tons gross, and one-quarter of her steam trawlers and other fishing boats. As an additional part of reparation, the German government further agrees to build merchant ships for the account of the Allies to the amount of not exceeding 200,000 tons gross annually during the next five years."

WAR INDUSTRIES BOARD. One of a number of boards organized for the purpose of enabling the United States to meet the tremendous demands for men and materials springing from her entrance into the World War as a combatant. While it functioned, it controlled and regulated industry in all of its direct and indirect relations to the war and to the nation. Especially was it charged with the duty of procuring an adequate flow of materials for the two great war-making agencies of the government — the War and Navy departments — and for the two agencies immediately affiliated with those departments, namely, the Emergency Fleet Corporation and the Railroad Administration. Originally the War Industries Board was organized as a branch of the Council of National Defense, which was created by Act of Congress of 29 Aug. 1916, "to increase and develop domestic production and to concentrate, mobilize and co-ordinate the country's resources, both in men and supplies, in time of need." President Wilson, however, in effect, reorganized the board 4 March 1918, and on 28 May, following, made it a separate administrative agency. As it was finally made up the board consisted of the following members: Bernard M. Baruch, chairman; Alexander Legge, vice-chairman; Robert S. Brookings, chairman of the Price-Fixing Committee; Rear Admiral F. F. Fletcher, representing the Navy Department; Hugh Frayne, head of the Labor Division; Major-General George W. Goethals, representing the War Department; Judge Edwin B. Parker, Priorities Commissioner; George N. Peek, Commissioner of Finished Products; J. Leonard Replogle,

Steel Administrator; L. L. Summers, Technical Adviser; Albert C. Ritchie, General Counsel, and H. P. Ingels, Secretary. Herbert Bayard Swope, C. Dillon and Harold T. Clark were named as assistants to the chairman. In a letter asking Mr. Baruch to accept the chairmanship of the board, the President declared its functions should be:

(1) The creation of new facilities and the disclosing — if necessary, the opening up — of additional sources of supply.

(2) The conversion of existing facilities, where necessary, to new uses.

(3) The studious conservation of resources and facilities by scientific, commercial and industrial economies.

(4) Advice to the several purchasing agencies of the government with regard to the prices to be paid.

(5) The determination, wherever necessary, of priorities of production and of delivery and of the proportions of any given articles to be made immediately accessible to the several purchasing agencies when the supply of that article is insufficient, either temporarily or permanently.

(6) The making of purchases for the Allies.

The President further stated that the ultimate decision of all questions, save those relating to the determination of prices, should rest with the chairman, the other members simply acting in a co-operative and advisory capacity.

Keeping in mind the President's outline of what its functions should be, the board organized for work by creating the following divisions:

Requirements Division.
Priorities Division.
Price-Fixing Division.
Controlled Industries Division.
Purchasing for the Allies Division.
Labor Division.
Conservation Division.

The duties of these divisions were apportioned as follows:

Requirements Division.— The principal task of this division was that of distributing materials and supplies to industries that were essential to the war before the less essential industries were taken care of. Such distribution was necessary because the demands made by the war upon the industries of the country were so great and so varied that in most cases the production of materials and supplies for direct and indirect war needs fell far short of meeting those demands and the demands of the civilian population as well. In many cases, the production was not sufficient even for war purposes. The first thing this division did was to make a survey of the industries of the country as a result of which numerous plants engaged in the production of non-essentials were converted into plants supplying the needs of the war. For instance, plants for making gas-holders were converted into munitions plants, carpet plants were converted into blanket and duck plants, automobile factories were converted into plants for the manufacture of air planes, refrigerator plants were converted into plants for making filing cases for the navy, furniture plants were changed into plants for making ammunition boxes, horseshoe plants were changed into plants for making trench picks, toy plants were changed into plants for the manufacture of packing-boxes, factories turning out women's waists were converted into plants for making signal flags, electric-vacuum plants were changed into plants for making Liberty motors, rubber and canvas factories were changed into gas-mask plants, stove plants were changed into hand grenade and trench-bomb factories, corset factories were put to work making supplies for the Medical Corps and gear plants were changed to plants for making gun-sights. The list of conversions might be continued almost indefinitely, but those referred to indicate how varied and extensive that list grew to be.

Priorities Division.— The functions of this division were to determine, whenever necessary, priorities of production and delivery and the proportions of any given article which were to be made accessible to the various and varying demands for it. The division formulated general plans for the co-ordination of the military program, as presented by the military authorities, and the industrial program, in so far as such programs called for priorities. It determined policies and designated agencies to carry such policies out. It defined those activities which are accorded preferential treatment because of their war or civilian importance and certified its classifications to the Fuel Administration, the Railroad Administration, the United States Employment Service and the Industrial Advisers of the District Draft Boards for their respective uses and guidance in distributing fuel, furnishing transportation and labor and passing upon cases of industrial and occupational deferment. All government and other agencies were governed by its decisions and rulings in all matters pertaining to priorities.

Price-fixing Division.— Statutory authority to fix prices was extended to the government with reference only to food, wheat and fuel — coal and coke. However, it had authority to commandeer, and this power, coupled with its power to determine priorities, enabled it in many cases to fix prices by agreement with producers. The prices fixed by it were of two kinds — prices which the government only paid and prices which were paid by the government, the Allies and the public. Prices for the government alone were fixed whenever such price-fixing was necessary to prevent it from being charged more than a reasonable and fair price for its needs and when the government purchases were not such as to disturb market conditions. When the needs of the government absorbed so large a portion of a product as to change normal economic conditions, then prices for the public also were fixed. Among the commodities, the prices of which were fixed, were aluminum, cement, copper, cotton fabrics, cotton linters, hides and leather, hemp, lumber, platinum, rags, sand, gravel, crushed stone, steel, wool and zinc. In each case, maximum prices only were fixed.

Controlled Industries Division.— Government control of an industry, in so far as distribution is concerned, results when its entire output is allocated. That control becomes absolute when, in addition to allocating the industry's output, the government also fixes the price therefor. The principal commodities for which prices were fixed by the War Industries Board already have been named. In some cases the entire supply of the commodities was

allocated also. With respect to certain other commodities the output was allocated though the prices were not fixed. The principal commodities with respect to which the entire output was allocated were chlorine, copper, cotton-duck goods, cotton linters, felts, hides and skins, manganese and chrome, military optical glasses, nitrate of soda, platinum, steel and pig iron, sulphur, toluol (the essential ingredient of T.N.T.), turbines, wood chemicals and wool.

Purchasing for the Allies Division.— Under an agreement between the United States and the Allies all purchases of supplies made by the latter had to be submitted to and approved by the Allied Purchasing Commission of the War Industries Commission It was the duty of that commission to secure the best prices and the best terms of delivery possible and submit them to the Allied governments. In practice the purchase of food and feed was made by the Food Administrator. The Allied governments had to agree among themselves as to their several requirements and as to the priorities of delivery. In cases where prices had been fixed by the Price-fixing Commission, such prices applied to purchases made by the Allies. In other cases, the prices were approved by the Allied Purchasing Commission. However, the purchases actually were made by representatives of the Allied governments within limitations imposed by the Allied Purchasing Commission.

Labor Division.— The activities of this division were devoted to:

(1) Securing co-operation of the government and organizations in reclaiming man power and waste materials.

(2) Utilization of prison labor — war, civil and disciplinary.

(3) Re-education by vocational training of crippled soldiers, sailors and persons injured in industry so as to make them self-sustaining.

(4) National waste reclamation system.

(5) Standardization of industries and occupations in penal institutions for producing materials.

(6) National road work system for prisoners.

(7) Development of war prisoners' division in the army.

(8) Induction into industry and agriculture of discharged or paroled prisoners.

(9) Army and navy waste reclamation.

(10) Development of camp gardens.

(11) Aiding in work of securing legislation to make this work permanent.

Conservation Division.— This division took over the work of the Commercial Economy Board of the Council of National Defense. Its functions were the studious conservation of resources and facilities by means of scientific, commercial and industrial economies. It determined in the case of each industry what labor, materials, equipment and capital could be dispensed with in order that these facilities might be put to more essential uses. In other words, its primary object was to eliminate waste and unnecessary uses of all kinds and to put the labor, materials or capital thus saved into businesses essential to war needs. The results of its efforts to conserve the wool supply of the country afford an excellent example of what it accomplished. Soon after taking up its duties it ascertained that substantial economies could be effected by reducing the number of designs of wool fabrics the manufacturers were putting out, and also by reducing the number of models of garments, eliminating the use of cloth for needless adornments and by reducing the size of samples. It was learned, for instance, that a fabric manufacturer would get out, say 1,000 designs for a season, of which perhaps not more than 200 would be sold in commercial quantities. The labor and material used in making the other 800 designs were wasted. Fabric manufacturers, therefore, were requested to reduce the number of their designs and thereby large savings were effected. Wholesale tailors were persuaded to reduce the size of the samples sent out by them, and as a result, 450,000 yards of cloth were saved in this way in the spring season of 1918 alone. The matter was taken up with other branches of the industry and a total saving of between 3,000,000 and 4,000,000 yards of cloth was the result. Even larger savings were effected by persuading clothing manufacturers to eliminate useless adornments such as belts, plaits, cuffs on sleeves and the like. Extensive savings in leather were brought about by getting shoe manufacturers to eliminate styles involving excessive and wasteful uses of material. Manufacturers of pneumatic tires for automobiles were induced to reduce the number of types and sizes they were putting out from 287 to 33 with a promise of a further reduction to nine types and sizes in two years. Similar economies were effected with reference to agricultural implements, paints and varnishes, stoves and furnaces, davenports and metal beds, tinware and sample trunks, buggies and spring wagons. Considerable labor was saved by persuading department stores to reduce their delivery services, this labor being released for more essential occupations. Taking all of these things into consideration the probabilities are that none of the various boards created for the purpose of helping the United States and the Allies to win the war rendered more efficient service.

ALBERT C. RITCHIE,
Attorney-General of Maryland, 1915–19; General Counsel, War Industries Board, 1918–19; and Governor of Maryland, 1920—.

WAR LABOR BOARDS. As the United States speeded up its industries for the successful prosecution of the war it appeared early that much depended on the attitude and efficiency of labor. The United States Labor Department was called upon to adjust problems of employment, wages and hours, mediation and the maintenance of a labor morale. A program of labor administration was formulated at a conference between the Department of Labor and the Council of National Defense in January 1918 and in approving the program President Wilson also appointed Secretary of Labor Wilson, Labor Administrator. The program called specifically for six agencies as follows: (1) an agency to establish Federal Labor Exchanges which would advise as to the methods of training workers and secure a staple labor supply; (2) an agency to deal with questions arising in regard to hours, wages, etc.; (3) an agency to secure proper working conditions; (4) an agency to secure adequate housing and living conditions; (5) an agency to collect and digest labor information; and (6) an agency to keep the public well informed. An advisory

commission was appointed by Secretary Wilson and on 28 Jan. 1918 this commission reported in favor of extending the program above outlined to include agencies for women in industry, training and dilution, etc., and also recommended the formation of a War Policies Board. From these suggestions there developed the War Labor Policies Board and the National War Labor Board, also known as the War Labor Conference Board and the Taft-Walsh Board. Directors were then appointed to administer the several agencies. On 13 May 1918 Mr. Felix Frankfurter was made chairman of the War Labor Policies Board; with him served representatives of the Labor, War, Navy and Agriculture departments, the War Industries Board, the Fuel Administration, Shipping Board, Emergency Fleet Corporation, Food Administration, Railroad Administration and the Committee on Public Information. Its chief function was to co-ordinate the industrial services of the departments and boards represented. It aimed to standardize employment conditions and thus to stabilize industry.

The National War Labor Board, formed 29 March 1918 was empowered to settle labor disputes by mediation and conciliation in all industries classed as essential to the successful prosecution of the war; to establish means to bring about such conciliation, and in the case of failure of local mediation to bring the parties in question for a hearing before the Board itself. In case the decision of the Board was not unanimous the case was carried before an umpire appointed by the President of the United States. The Board consisted of Messrs. W. H. Taft and F. Walsh as representatives of the public, Messrs. L. A. Osborne, W. H. Vandervoort, L. F. Loree, C. E. Michael and B. L. Worden as representatives of the employers, and Messrs. F. S. Hays, W. H. Johnston, V. A. Olander, T. A. Rickert and W. L. Hutcheson as representatives of the employees. The basis of the relations between employers and employees in war industries which the Board recognized, included the right of workers to organize trade unions, collective bargaining, maintenance of satisfactory health and safety measures, equal pay for women, the eight-hour day as basic in certain industries, mobilization of labor by every available means, the fixing of wages, hours, etc., in accord with local standards, the recognition of the principle of a living wage. Among the important decisions of the Board were those in the cases of the telegraph companies, the Bethlehem Steel workers, the street railways, the Smith and Wesson munition workers and the Bridgeport strike.

WAR OFFICE, in Great Britain, the department of government which controls all matters connected with the army. The head of the department has long been the Secretary of State for War, with a seat in the cabinet, and a salary of $25,000 a year attached to his office. During the World War a War Cabinet was formed, with D. Lloyd George (q.v.) as Prime Minister and First Lord of the Treasury, he having been Minister of Munitions from May to July 1916 and Secretary of State for War until December 1916, when he was made Prime Minister. Earl Curzon at the same time was made Lord President of the Council, A. Bonar Law Chancellor of the Exchequer, and Viscount Milner and Arthur Henderson ministers without portfolio.

WAR OF THE PACIFIC, a name given to the war between Chile and Bolivia and Peru in 1879–83. See BOLIVIA; CHILE; PERU.

WAR PAINT, among the American Indians, paint put on the face and other parts of the body on going to war, with the object of making their appearance more terrible to their enemies.

WAR PATH, among the American Indians, the route or path taken on going to war; a warlike expedition or excursion. On the warpath means on a hostile or warlike expedition; hence, colloquially, about to make an attack on an adversary or measure.

WAR AND PEACE ('Voĭna i Mir'). In the early sixties Count Tolstoy was engaged in gathering material for a novel that should introduce some of the surviving participants in the famous "Dekabrist," or December Conspiracy of 1825, and portray their relationship to the changed conditions in Russia, after the accession of the liberal Emperor Alexander II, who permitted these surviving exiles to return from Siberia to their former homes. He wrote several chapters and parts of chapters, but was irresistibly drawn back to the primal causes of the Conspiracy in the fateful period of Napoleon and of mystical-minded Alexander I. He laid aside his project of producing a contemporary romance and energetically went to work on a historical novel which should depict the epoch ending with Napoleon's invasion of Russia, the burning of Moscow by Count Rostopchin and the disastrous retreat of the French. He had three chief objects in view. One was to give living pictures of the great events not only in Russia but also in Europe that brought about the downfall of Napoleon. The second was to evolve a theory of Chance or Fate as overruling the apparently free actions of even the greatest of men. The third was to expound and illustrate a philosophy of life. His dramatis personæ comprise emperors, famous statesmen and generals, gentlemen and ladies of the court, and a host of landed proprietors, princes and other titled personages, soldiers, peasants, each carefully individualized and, however insignificant, yet introduced so as to become an integral part of the whole. The conversations also, even when trivial, are so managed as to help create the general effect of reality.

The flow of the narrative is occasionally interrupted by philosophical disquisitions in themselves forming a complete treatise which has been translated and published in both French and English. Its English title is 'Napoleon and the Russian Campaign,' and its main argument tries to prove that great leaders, like Napoleon and the Emperor Alexander I, were not, as they themselves believed and as historians have taken for granted, the principal factors in the great movements of mankind, but were merely like the kings, castles, knights and bishops on a gigantic chessboard directed by a higher power which Tolstoy calls Chance or Fate. He argues that even their mistakes and blunders were vital links in the woven chain of circumstance leading to their successes, and actions which viewed from the

standpoint of ordinary common sense would seem to have been to the last degree fatuous were turned to their advantage; while, on the other hand, lofty intentions and admirable qualities were made the instruments of misfortune. He shows how mighty preparations were brought to naught and petty circumstances led to immense consequences. There is, therefore, deep meaning attached to slight episodes and to snatches of idle dialogue: they are like the chips floating on a broad current, making evident to the eye in which direction the river flows. The epilogue also has been published by itself under the title of 'Power and Liberty,' in which Tolstoy scouts the theory of Free Will. Three characters, Prince Andreï Bolkonsky, Count Nikolaï Rostof and Pierre Bezukhof in a very distinctive way illustrate the author's own mental and religious development. They are members of families from which — the names being only slightly changed — Count Tolstoy himself was descended, and their careers follow rather closely the records and traditions that had come down to him, modified by an infusion of his personal experiences in a somewhat similar environment abroad, in Moscow and Petrograd, in the army and in the activities of country life. In the character and theories of the philosophic muzhik, Pláton Karatáyef, may be seen exemplified the religious ideals which Count Tolstoy later developed as the guide of his life and which came to be the culmination of his teachings, in accordance with which he renounced his wealth, his title, his home, his family, everything usually held dear by men of his station. These three characters are swept into the great maelstrom of the Napoleonic Wars; their individual actions are contrasted with the historic figures that appear and reappear — Napoleon, Alexander, General Kutúzof, Prince Adam Czartoryski, Speransky, General Bennigsen, the Countess Potócka and many other famous men and women of that day. There is a kaleidoscopic succession of descriptions of scenes in palaces and in peasants' izbas, in camps and in battles. There are horse-races and balls, quarrels and duels, flirtations and elopements, proposals of marriage, realistic descriptions of births and of deaths, drinking bouts and gambling, country idyls and workingmen's riots, councils and conferences, the orgies during the conflagration of Moscow, the horrors of the French invasion, hunting and harvest scenes — all depicted with perfect realism, so that the whole seems like a transcript from life, while the element of fiction is fused into a vast transcript of history.

As a novel 'War and Peace' has serious faults, but its greater merits place it in the front rank not only of Russian but also of world literature. It is of remarkable length. The original covers more than 2,000 pages, aggregating not far from 650,000 words. It appeared between 1864 and 1869 in the *Russian Messenger* (*Russky Vyéstnik*). It was enthusiastically received, and when published in six volumes went through many editions. In the later and less expensive popular editions the dialogue, which, in order to represent the fashion of the last century, was given with a considerable admixture of French, is all put into Russian. The sixth edition is dated 1886, and in this year the first English edition made by Clara Bell from the French version was reprinted in New York. In 1898 the first translation from the original Russian, by Nathan Haskell Dole, appeared in six volumes. It is also comprised in the later versions of Tolstoy's complete works made by Leo Wiener and by Constance Garnett.

NATHAN HASKELL DOLE.

WAR PENSIONS. During the fiscal year 1918–19 the United States Government paid to 624,427 persons pensions totaling $222,129,292.70. This was the largest sum ever disbursed by the government since the pension system was adopted notwithstanding the fact that the number of names on the pension roll was the smallest since 1890. Payments on account of pensions during the preceding fiscal year amounted to $179,835,328.75. There were at that time 646,895 names on the pension rolls. The greatest number of names ever on the United States pension rolls was 999,446 in the year 1902. Payments to them totaled $137,502,267.99. According to the 1919 report of the Pension Commissioner the total pensions paid on account of the Civil War up to that year amounted to $5,299,859,509.39 and the total on account of all wars was $5,617,520,402.30, including $65,211,665.71 paid on account of the Spanish-American War. The net reduction in the pension roll during 1919 was 22,468 names, 32,149 names having been stricken from the roll while 9,681 names were added to it. Of the pensioners on the rolls in 1919, 3,747 were scattered through 63 foreign countries, one being on the Island of Saint Helena, famous in history as the place of Napoleon Bonaparte's last exile and death. These pensioners in foreign countries received a total of $1,188,188.45. Ohio led the States with the greatest number of persons on the Federal pension rolls in 1919, there having been 60,002 residents of that State who drew pensions totaling $21,582,330.04 in that year. Pennsylvania was second with 59,072 who received $20,630,813.44; New York came third on the list with 53,736 pensioners who drew $19,631,090.72; Illinois was fourth with 43,976 pensioners who received $15,956,335.52 and Indiana was fifth with 37,647 pensioners who drew $13,703,084.94. See PENSIONS.

WAR POWER, The United States Constitutional, dates back to Federal Convention of 1787; and it provides for the national defense through Congress which alone has the right to declare war and of making rules relative to the conduct of the war and of captures on land and sea. Congress is also empowered to raise and maintain armies and the navy and to make rules for the government of both and to provide for their organization, training and discipline. This power is exercised through the President of the United States, as the commander-in-chief of the militia and the land and naval forces in the service of the nation. It is the duty of Congress to provide the necessary military forces in case of need; and it is the business of the President as the chief executive officer of the nation, the army and the navy, to see that these are made use of in accordance with the will of the nation as expressed through Congress, which must decide all questions relative to the strength and composition of the land and naval forces and

prescribe the Articles of War and the Rules for the Government of the Navy. The declaration of war by Congress does not, however, become law until it has received the sanction of the President of the nation. The President is also empowered to use the national forces on land and sea to repel foreign aggression or invasion and to suppress insurrection until Congress is able to declare its will in the matter. In fact the powers of the President in case of war, invasion or insurrection are plenary over the forces placed at his disposition by Congress, or by the Constitution. This applies even to the property of the enemy which he may take for the use of the army, the navy and the needs of the nation in time of war. In the case of newly-acquired territory the President also exercises very extensive powers until it has been assimilated legally by act of Congress. Consult Black, H. C., 'Constitutional Law' (1895); Clode, C. M., 'Military Forces of the Crown' (1869); Coolidge, A. C., 'United States As a World Power' (1908); Moore, J. B., 'American Diplomacy' (1905); Pomeroy, J. N., 'Constitutional Law' (1907).

WAR RELIEF. See WAR COSTS.

WAR RISK INSURANCE. The Bureau of War Risk Insurance (U. S. A.) traces its origin back to 1914 in the days when the world was stunned by the European cataclysm, and found its prototype in the action taken by the British government in assuming the war time risk on vessels flying the British flag. The British government had all it could do to provide for its own commerce. That left neutrals to look after themselves. It was necessary for America to cover the risks on American vessels and cargoes. William G. McAdoo, then Secretary of the Treasury, asked of Congress the authority to establish a Bureau of War Risk Insurance as an adjunct to the Treasury Department. Congress passed a bill at once to provide government insurance for American hulls and cargoes. William C. DeLanoy, a prominent insurance broker of New York, was appointed to establish and direct the new government bureau.

Mr. DeLanoy continued in office as Director of the Bureau of War Risk Insurance until October 1918 and was succeeded by Col. Henry D. Lindsley who took office in December 1918, resigning in the spring of 1919 to be in turn succeeded by Col. R. G. Cholmeley-Jones, the present Director of the Bureau.

Mr. DeLanoy began business on 2 Sept. 1914 with an office force of four persons, yet on the first day of his incumbency Mr. DeLanoy wrote several hundred thousand dollars worth of insurance on American ships and cargoes. This marine insurance remained the only form of war risk insurance until June 1917 when Congress amended the original war risk bill to establish a Seamen's Division to insure the lives of officers and crews of American merchant vessels in sums ranging from $1,500 to $5,000 according to their scale of pay. On 12 June 1917 President Wilson approved the amendment to the Act of 1914 under which the War Risk Insurance Bureau was authorized to insure the masters and crews of American merchant vessels against loss of life or disability on account of risks of war and to provide for compensation to United States prisoners of war while detained in enemy countries. Under the amendment compensation was authorized in case of death, permanent or total disability, or loss of both hands, both arms, both legs, both feet, both eyes, or any two of these, amounting to one year's earnings or 12 times the monthly earnings, not less than $1,500 nor more than $5,000. There were also specified certain compensations: 50 per cent of one year's earnings for the loss of one hand; 65 per cent for one arm; 50 per cent for one foot; 65 per cent for one leg; 45 per cent for one eye and 50 per cent for total loss of hearing. There was established a department of the bureau for issuing policies on the lives of masters and crews.

Captain John J. Crowley of the Traveler's Insurance Company with headquarters in Hartford, Conn., was put in charge of this Seamen's Division. Captain Crowley was a man within the draft age and had just completed arrangements for entering an officers' training camp when he was commandeered to serve his country in the capacity of insurance organizer, a task for which he was almost uniquely equipped by training, experience and temperament, and the success of this Division of Marine and Seamen's Insurance was due in no small part to the very fine work of Captain Crowley and his assistants.

The writing of marine and seamen's insurance was suspended on 4 Jan. 1919. While in existence a total business of $2,389,952,996.54 was accomplished with the premiums on 33,381 policies amounting to $47,593,122.26, and claims paid to the extent of $28,642,789.73.

This left a surplus of approximately $18,000,000 which, together with the $50,000,000 fund voted by Congress, reverted to the United States Treasury.

Meanwhile in the months following the entrance of the United States in the World War there arose a public demand for some desirable method of compensating soldiers and sailors for injuries and their dependents for deaths in the military and naval services. It was generally agreed that the evils of the pension system of the Civil War period should not be repeated. On 2 July 1917 Secretary of the Treasury McAdoo conferred with representatives of insurance companies in regard to an insurance scheme to cover the war risk of those serving in the military and naval forces of the nation. The Committee on Labor of the Advisory Commission of the Council of National Defense also co-operated; a plan of government insurance providing for both compensation and insurance was drawn up, presented to Congress and enacted into law 6 Oct. 1917. The War Risk Insurance Bureau was empowered to administer the act and for this purpose the bureau was reorganized into four divisions: (1) Marine and Seamen's Insurance Division; (2) The Allotment and Allowance Division for compulsory and voluntary allotments of funds and family allowances to be paid by the government; (3) The Compensation and Insurance Claims Division for the consideration of cases of disability or death due to injuries or diseases contracted during actual service; (4) and the Insurance Division.

The War Risk Insurance Act entitled all officers and enlisted men in the service at that time to obtain insurance for any sum up to $10,000 if they made application within 120 days

after the date of passage of the act, and provided that all men enlisting thereafter must make application for it within 120 days after their enlistment. For men already in the service the insurance might date back to the time they entered the service.

Another feature of this act was the provision whereby a soldier or sailor might make allotment of his pay to any one dependent upon him, and the government would supplement this with an allowance.

Organization.— Immediately upon the passage of the act voluntary applications for insurance began to pour in. The first came from Lieut. Coke Flannagan of the army, for the maximum $10,000. By cablegram on 12 Nov. 1917, General Pershing applied for the maximum insurance for himself, at the same time thanking the government in the name of the army in France for giving to the soldiers a privilege which no other country had ever extended to its fighting men.

The Military and Naval Division of insurance was thus added to the Marine and Seamen's Division and the two divisions were still presided over by the original director, Mr. DeLanoy. To the general direction of the work Hon. Thomas B. Love of Texas was called as Assistant Secretary of the Treasury in charge of War Risk Insurance and Internal Revenue. At this time the late Maj. Willard D. Straight of New York was summoned to Washington to command the War Risk Section for duty overseas. If the insurance plan was to be the broad, beneficent plan intended, every man in the service should be insured. To get the 1,500,000 men already in the army and the navy and sign up the thousands and tens of thousands being added daily and weekly to the war force was a Herculean task even if a big organization had been devised for this work. But there was no organization. The War Risk Bureau had two rooms in the basement of the Treasury building. It had to get thousands of clerks to handle the colossal volume of papers. It had to spread its canvassers in camps in America and camps in Europe, in navy stations in America, in England and in France, and elsewhere. It had to jump in a few weeks from a bureau with 20 clerks to one with thousands of clerks. The housing of the bureau presented extreme difficulties. Seemingly every available foot of office space had already been taken over by one or another branches of the government. Various old departments and not a few new ones were having structures built for them hastily and meanwhile were "camping out" wherever they could find space. There was a great scarcity of labor, particularly skilled labor. There was still a greater scarcity of office workers, particularly trained office workers.

The life insuance division which was known in the beginning merely as the "Underwriters Section" was under the immediate direction of Mr. Fred O'Neil, who accomplished the pioneer work and was later succeeded by Mr. John M. Gaines, a member of the Actuarial Society of America, who contributed distinguished service in systematizing the records of War Risk.

Within five days of the passage of the act in October 1917 the bureau sent insurance applications to every military and naval station. At the same time the adjutant general telegraphed every department commander, explaining the opportunities and privileges the new law extended to the men — how for an average cost of $8 per $1,000 per year for policies up to $10,000, any and every officer and man in army and navy could insure his life, make provision for wife, child, mother or dependent in case of his death or disability.

A few days later representatives of the rank and file of every military unit in the United States met in Washington, summoned by telegraph by the government to receive first hand information concerning the construction and operation of the Insurance Act. The Secretary of War, Newton D. Baker, and the Secretary of the Navy, Josephus Daniels, took an active part in forming this organization to co-ordinate in the field.

In the beginning the Allotment and Allowance Division was under the direction of Mr. F. C. Brown; later the leadership passed to Mr. Dudley Cates; and the activity of these officials is reflected by the fact that before the armistice was signed there were on file in the bureau in Washington the applications for allotment and allowance of more than 4,000,000 men.

The whirlwind campaign in the United States that went forward immediately on the passage of the act could not exceed the concerted, whole-hearted effort to reach the men so much nearer the risk of supreme sacrifice in France. At the time the act was passed there were a quarter million soldiers already in England and France and hundreds of thousands on the point of embarking for duty overseas. Col. S. Herbert Wolfe, of the Quartermaster's Corps, who was in Paris on special detail, was ordered by cable to form an organization, and at the same time a special section of the Adjutant General's Department was organized by Maj. Willard Straight in America for service overseas. After three weeks of intensive training to familiarize themselves with the law and its interpretation a War Risk company of 35 officers and 65 men left Washington for New York whence they sailed overseas on Christmas Day, 1917. This contingent carried through the campaign for War Risk Insurance in France.

From 5 o'clock in the morning until 9 o'clock at night field squads were at it. Speeches were made in the Y. M. C. A. huts and at mess and everywhere that the men could be gotten together. After the speechmaking there was personal work. Every man was approached directly. If the proposition was not quite clear to him it was explained in detail; if his attitude remained indifferent all the ingenuity of the insurance squad was bent toward his conversion. They wrote insurance all the way from the farthest western training camp to the most easterly port of debarkation and the receiving ports in France. They wrote insurance as near the front-line trenches as any non-combatant was permitted to go, and when they could proceed no farther they sent blank insurance applications into the front trenches on the very eve of battle.

In the Insurance Division of the Bureau of War Risk, locked up in a steel cabinet, is now treasured the original paper, grimy with the soil of the trenches, but bearing the names of boys who "signed up" on it for insurance of varying amounts the night before they went out at daybreak into No Man's Land, some never to return. Across the names of these is written

simply the word "Dead." But these applications collected by insurance officers who had gone into the trench during a stiff German offensive, have been treated as the last will and testament of those soldiers and the beneficiaries mentioned are receiving government insurance upon as valid a contract as if it had been formally made and taken in triplicate as was the custom.

These insurance officers wrote insurance in hospitals; went into "flu" wards and among the desperately wounded and wrote insurance for dying men; policies, the validity of which was established by a ruling of the Secretary of the Treasury and on which payments are being made.

When the campaign ended by statutory limitations on 12 February, more than $900,000,000 worth of insurance had been written for the quarter million men then in foreign service. Capt. G. H. Rennick who was also a member of this unit, on his return to the United States was assigned as assistant director of War Risk in charge of personnel, and Capt. John W. Barton, who later was appointed assistant director in charge of Compensation and Claims, was a leader in the work of insuring the men in hospitals and camps abroad. The writer of this article, the present director of the Bureau of War Risk Insurance, was privileged to have a part in this insurance campaign among overseas troops.

All in all, the Bureau of War Risk Insurance, in America and abroad, has written $40,000,000,000 of insurance on the lives of 4,539,045 men and women in the military service.

After the signing of the armistice Secretary Love resigned on account of ill health, and was succeeded as Assistant Secretary of the Treasury in charge of War Risk, by the Hon. Jouett Shouse, of Kansas.

In the early spring of 1919 the bureau moved into its new home, a building started as a hotel but taken over by the government in the course of construction and finished so that the Bureau of War Risk Insurance might at last be housed under one roof. It is 11 stories above ground, has three sub-basements and a total floor space of 608,000 square feet. It has 12 high-speed elevators, its own telephone exchange and every comfort and convenience for its 16,000 employees, over 90 per cent of whom are women. In this new home the bureau will continue its service to service men.

Allotments and Allowances.—Under the law every enlisted man with a wife or with a child under 18, or with a divorced wife in receipt of alimony was required to set aside a portion of his pay as an allotment for these dependents, who were known as class A. For parents, brothers, sisters and grandchildren, known as class B dependents, the enlisted man might make voluntary allotments. In the original law the compulsory allotment for class A dependents was at least $15 per month from a man's pay and as much more up to 50 per cent of his monthly pay to equal the allowance in the government schedule. Women in the service were placed on the same basis as men. Allotments in class B were subject to the same rule. Government allowances were given only on request and after payment of the compulsory allotment. The schedule of government allotments was at first as follows: Wife alone, $15; wife and one child, $25; wife and two children, $32.50 and $5 additional for each additional child up to $50, the maximum; for one child alone, $5; for two children, $12.50; for three, $20; for four, $30; and $5 for each additional child. Changes in pay of enlisted men involved a corresponding change in allowances and allotments, which in turn necessitated a vast amount of clerical work. To obviate this an amendment was introduced in the law providing for a flat compulsory allotment to dependents of class A of $15 per month and a flat allotment to dependents of class B of $5 per month.

Compensations and Insurance Claims.—The compensation and claims division was in the nature of an employer's liability company. This division, as the name indicates, paid compensation and indemnities in cases of disability or death due to injuries suffered or diseases contracted while in actual service. These two branches, however, were almost insignificant compared with the insurance division. The insurance provisions of the Act of 6 Oct. 1917 enabled any person, male or female, in active military or naval service to take out insurance in mutiples of $500 for any sum from $1,000 to $10,000. Premium rates on an annual term basis were moderate and a list of beneficiaries was specified. There were made certain modifications of the act in 1918, when Congress extended the time for applying for the insurance, changed the rates of allowance to dependents, allowed changes in beneficiaries when attested in writing, limited the fees of attorneys to $3 in preparing and executing papers for claimants and provided fine and imprisonment for soliciting or receiving any other fees. Other amendments were requested by the Treasury Department in 1919 especially in the schedule of compensation payable to disabled ex-service men. Under the law as it stood a man totally disabled was paid $30 a month if single. The Treasury Department requested that this be increased $80; it asked also that the allowance of $45 for a man with a wife but no child be increased to $90; and $55 paid a man with wife and one child be increased to $95. The man with a wife and two or more children received $65; it was recommended that this be increased to $100. The amendment incorporating these changes was known while pending before Congress as the Sweet Bill and became a law on 24 Dec. 1919.

The stupendous scope of the Bureau of War Risk Insurance is shown by the following facts and figures, which demonstrate that within its organization are four of the largest businesses of their kind in the world.

1. Marine and Seamen's Insurance Division:	
Total business to 1 Dec. 1919	$2,389,962,663.54
With premiums collected	47,586,491.45
33,384 policies issued and paid claims.	28,751,628.72
Surplus over expenses and refunds	17,129,994.46
2. Allotments and Allowance Division:	
Payments of allotments to dependents of men in the service	$283,538,383.77
Payments of allowances	255,922,779.12
Total up to 1 Dec. 1919	$539,461,162.89
3. Compensation and Claims Division:	
37,053 claims approved for Compensation on account of deaths in the service and now making payments thereon each month	$976,590.27

100,974 claims approved for Compensation on account of disabilities through service and now making payments thereon each month	$2,654,927.90
27,806 burial awards and burial expenses	$1,956,119.08
4. Insurance Division:	
Individual policies numbering 4,586,535 written between 6 Oct. 1917, and 1 Dec. 1919, representing a total amount of insurance	$39,987,020,500.00
Premiums between 6 Oct. 1917, and 1 Dec. 1919, approximately	325,000,000.00
Claims payable, approximately	1,100,000,000.00

Compensation (Figures as of 1 Dec. 1919):

	Number
Claims received	323,340
Claims approved	138,000
Claims pending	90,615
Payments made each month to disabled men and to dependent relatives of those who died.	113,131
Payments discontinued due to death of payee or recovery from disability	23,249
Disability claims disallowed	22,000
Death cases considered as compensation cases, wherein it has been established there are no dependent relatives entitled to receive compensation	72,000

Insurance (Figures as of 1 Dec. 1919):

Claims received	128,952
Claims approved	121,000
Claims disallowed	1,400
Claims pending	6,526

The War and Navy departments notify the Bureau of War Risk Insurance of all deaths and disabilities occurring while men are in the service. These notifications are treated as potential claims, and every effort is made by the bureau to ascertain whether an award should be made in each case. Sometimes relatives cannot be found and in other cases communications are frequently received by the bureau to the effect that no claims will be made.

Up to 1 Dec. 1919 the bureau had received for consideration 323,340 claims for compensation, and 128,952 claims for insurance.

Of the compensation claims approximately 138,000 have been approved. Approximately 22,000 disability claims have been disallowed because, after thorough investigation, it was found the claimants were not entitled to compensation benefits. In more than 72,000 death cases considered as compensation cases it has been definitely established that there are no dependent relatives entitled at the present time to receive compensation benefits. On 30 Nov. 1919 90,615 compensation claims were pending. Of the insurance claims the bureau has approved 121,000 claims and disallowed 1,400 claims, and on 30 Nov. 1919 there were pending 6,526 insurance claims.

Under the compensation feature of the War Risk Insurance Act the bureau is making 113,131 payments each month to men who were disabled while in active service, in the line of duty, and to the dependent relatives of those who die. Payments have been discontinued on 23,249 cases, due to the death of the payee or the recovery from disability. During the war more than four and one-half million of our soldiers, sailors and marines were insured by a government contract, known as yearly renewable term insurance, and the total amount of insurance underwritten was nearly $40,000,000,000. The figures are astounding. On 1 Jan. 1919 the 19 largest American life insurance companies had about $20,000,000,000 insurance outstanding; furthermore, the business of the American life insurance companies, which it had taken many of them over 50 years to establish, was obtained by agency forces operating in all the cities and large towns of the United States, while, on the other hand, the Insurance of the War Risk Bureau had no qualified agents and had to rely in many instances upon the services of those without insurance experiences.

During the war the bureau depended upon the army, the navy and the marine corps for all contact with service men, contact manifestly upon a wholesale basis. Men entering a service had their insurance written up for them and the applications for family allowance were made out by the officers in charge of the work, and all papers were forwarded to the bureau by the officers. The bureau had no direct contact with men in the service, its province being merely to carry out the instructions contained in the service men's papers sent in by camp officers. The bureau, however, had direct contact with the families of service men, to which insurance or allotment and allowance were paid; the bureau in this work becoming in effect a gigantic banking concern through which were cleared service men's checks against the United States Treasury and payable to their dependents. With demobilization and the return to civil life organized processes ceased and there existed no means by which the bureau could appeal directly to service men and urge upon them the very great value of their War Risk Insurance and the importance of retaining it and ultimately converting it into permanent United States Government Insurance. A large percentage of the men when released from the service failed to make premium payments and their insurance thus lapsed. It was found that many elements entered into the failure to keep up this insurance. Many men, just out of military service, and not yet placed industrially, were unable to pay their War Risk Insurance premiums, small as those premiums were. This constituted a large class, but not so large, it was believed, as the class made up of those who were apathetic on the subject of life insurance and those not fully alive to the value of life insurance and the tremendous asset which they have in a government insurance contract.

To meet this situation the United States Treasury Department, under whose general supervision is the Bureau of War Risk Insurance, issued a very generous reinstatement ruling. The reinstatement provision allows a service man 18 months after discharge from the service within which to reinstate his policy. He is required to pay only two months' premiums, one for the month of grace, during which he had full insurance protection, and the other for the month in which reinstatement is made.

As originally announced this ruling stipulated that the application for reinstatement be accompanied by a declaration on the part of the applicant that his health is as good as at the date of discharge. This ruling has since been liberalized by an amendment providing that men out of the service shall be permitted to reinstate merely by paying two months' premiums, without a formal application for reinstatement or a statement as to health, at any time within three calendar months following the month of their discharge from the service

Later a special blanket ruling was made which permitted any former service man to reinstate his lapsed or canceled insurance before 31 Dec. 1919, provided the applicant was in as good health as at the date of discharge, or at the expiration of the grace period of his insurance, whichever was the later date, and he so stated in his application.

Another decision is of interest to former service men who paid back premiums on their insurance reinstatement. Those who paid back premiums in excess of two may have the excess applied toward the payment of future premiums.

The Sweet bill, passed by the 66th Congress, provides for a change in the manner of paying converted policies, and the Wason bill, answering the wishes voiced by the American Legion, proposes similar changes in the payment of War Risk term policies issued to men while in active service. The Wason bill contains provisions not included in the Sweet bill, which latter bill had passed the House before the American Legion meeting. The Wason bill incorporates the additional recommendations of the Legion and embodies additional amendments to the act not touched by the Sweet bill.

There had been an insistent demand for a change from the present method of paying policies in monthly instalments covering a period of 20 years. And to be sure it is not a perfect system for small policies. A thousand dollar policy paid in that manner means a monthly payment of $5.75 continuing over 20 years. On the other hand the possibility for the misinvestment of a lump sum payment by inexperienced beneficiaries always exists.

To arrive at a conclusion as to the best method of policy payment, the bureau communicated with numerous philanthropic and charity organizations asking, "Of those adults who come to you for aid, whether or not they or any member of their family had insurance, how many of them get on their feet financially in the first, the second, the third, or the fourth year?" The records furnished by these organizations proved that 85 per cent of all the adults who need financial aid because of stress get on their feet within the first year; more than 90 per cent the second year, and all but the disabled the third year. By these records, we were able to determine that three years is approximately the period of stress. So, upon recommendation of the bureau, the Sweet bill provides that the policyholder shall have the right to say whether the policy shall be paid in a lump sum or in 36 or more monthly payments.

The Wason bill has a like provision for the present term insurance, and provides also that if the policyholder has not designated how the policy shall be paid, the beneficiary shall have the right to elect to take the proceeds in not less than 36 monthly intalments. If the insured specifies that the policy shall be paid in 36 monthly instalments, the beneficiary cannot reduce the number of payments, but can increase the number. The beneficiary can say, "I want this paid in 50 instalments," or any other number; but by making it impossible for the beneficiary to reduce the number of payments he is protected against unnecessary loss or danger of loss.

The Wason bill further provides that the full face of the policy shall be paid to beneficiaries irrespective of what sums may have been paid on the policy to the insured in his lifetime on account of total and permanent disability; and it exempts from premium payments those receiving hospital care from the bureau, those receiving training under the Vocational Rehabilitation Act and those who are temporarily totally disabled.

The Sweet bill increases the class of beneficiaries to include uncles, aunts, nephews, nieces, brothers-in-law, sisters-in-law and persons who may have stood in loco parentis to the insured for a period of one year preceding the issuance of the policy.

The Wason bill goes even further; it absolutely abolishes any limitation as to beneficiary and makes a United States Government Insurance policy negotiable in exactly the same way that commercial policies are negotiable.

The class of persons privileged to carry government insurance is comparatively small, and once that privilege is finally lost it is lost for all time. If a man seeks counsel on his insurance and it is suggested to him to allow his government contract to lapse and take out some other insurance contract, that man has suffered a gross injustice.

Under the Sweet bill single men would receive $80 a month, instead of $30 as provided by the original act; those with a wife, $90 instead of $45; those with a wife and one child, $95 instead of $5; those with a wife and two or more children $100 instead of $65; those without a wife, but having one child, $90 instead of $40, with $5 additional allowed for each of two additional children. Partial disability is to be rated by a percentage of the foregoing, and it shall equal "the degree of reduction in earning capacity."

The compensation provisions of the Wason bill are even more generous. For a disabled man without wife or child $80 a month is allowed; if he has a wife and no child, $95; a wife and one child $105; a wife and two children, $112.50; and $5 additional for each child above two; if there is no wife, but one child, $85; no wife, but two children, $92.50; no wife, but three children, $100; no wife, but four children, $110, and $5 additional for each additional child.

Closely related to the Compensation Division, though distinct in its own province, and certainly very near to the hearts of all who are interested in service men, is the Medical Division. Properly speaking, though the Bureau of War Risk Insurance is charged with the physical aid and relief of all men discharged by the army, navy and marine corps as physically unfit, the bureau has no hospitals. There are, however, numerous hospitals owned by the Treasury Department and operated by the United States Public Health Service. In these hospitals as well as in various private hospitals disabled service men are receiving treatment. Just before the 66th Congress adjourned its special session in 1919 an appropriation of $9,000,000 was made for the purchase or building and equipment of hospitals to be owned by the Treasury, and operated by the United States Public Health Service, especially for War Risk patients The program outlined at that time seemed ample for all possible needs. As time has gone on, however, it has been made evident

that vastly greater preparation for the treatment of men discharged because of disability will have to be made. It is not unlikely that Congress will be asked to make a considerably larger appropriation for this purpose.

Probably it will be necessary in time to add to the hospital facilities now available, on account of the fact that several thousand disabled men will shortly be discharged from army hospitals and turned over to the Bureau of War Risk Insurance as compensation and hospital cases. Months of treatment to effect a cure will be required in a large number of those cases in which cure may be possible. Unfortunately there is a distressingly large number of these cases for which institutional care must be considered as permanently necessary. Besides, there are those men who were discharged from the service as physically unfit before being assigned to permanent units.

Early in the summer of 1918, with the idea of standardizing the physical fitness of the army, there was a general weeding out process in the training camps all over the country. As a result of this, more than 170,000 men who had not completed their work in the training camps were sent back to civil life. Of this number more than 25,000 were tubercular cases. Some of these cases had developed from pneumonia and "flu," but so many of them had developed without any exact cause to which the malady might be assigned, that the assumption among army medical men was that a large number of them had been latent or incipient at the time the men were accepted by their local boards. There were approximately 3,500 cases of discharge because of epilepsy, and the list of causes for discharge on account of physical disability runs the whole gamut of human ills. In time, all of these cases will be submitted to the Bureau of War Risk Insurance for hospital treatment to which every man discharged because of physical disability is entitled:

The cost of administering the bureau to 30 June 1919 was approximately $19,000,000, from which must be deducted the profit of $17,124,903.84 made in the marine insurance division, which reduces the net cost of administration up to 30 June 1919 to less than $2,000,000.

The following table gives the monthly premium rates on each $1,000 of war risk insurance.

GOVERNMENT INSURANCE RATES.

AGE	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Ordinary life	$1.06	$1.08	$1.10	$1.12	$1.15	$1.17	$1.20	$1.23	$1.26	$1.29	$1.32	$1.35	$1.39	$1.43	$1.47	$1.51	$1.55
20-payment life	1.66	1.68	1.71	1.73	1.76	1.79	1.82	1.85	1.88	1.91	1.95	1.98	2.02	2.06	2.10	2.14	2.19
30-payment life	1.32	1.34	1.36	1.38	1.40	1.43	1.45	1.48	1.51	1.53	1.56	1.59	1.62	1.66	1.69	1.73	1.77
20-year endowment	3.29	3.30	3.30	3.30	3.31	3.31	3.31	3.32	3.32	3.33	3.33	3.34	3.34	3.35	3.36	3.37	3.38
30-year endowment	2.04	2.04	2.05	2.05	2.06	2.06	2.07	2.07	2.08	2.09	2.10	2.11	2.12	2.13	2.15	2.16	2.18
Endowment age 62	1.29	1.32	1.36	1.40	1.44	1.48	1.53	1.58	1.63	1.68	1.74	1.80	1.87	1.94	2.01	2.09	2.18
Term (temporary or wartime)	.63	.63	.64	.64	.64	.65	.65	.65	.66	.66	.67	.67	.68	.69	.69	.70	.71

AGE	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Ordinary life	$1.60	$1.65	$1.70	$1.76	$1.81	$1.88	$1.94	$2.01	$2.09	$2.16	$2.25	$2.34	$2.43	$2.53	$2.64	$2.76
20-payment life	2.23	2.28	2.33	2.38	2.44	2.50	2.56	2.62	2.69	2.76	2.83	2.91	2.99	3.08	3.18	3.28
30-payment life	1.81	1.85	1.90	1.95	2.00	2.05	2.11	2.17	2.23	2.30	2.38	2.46	2.54	2.64	2.73	2.84
20-year endowment	3.39	3.40	3.41	3.43	3.44	3.46	3.48	3.51	3.53	3.56	3.60	3.63	3.68	3.72	3.78	3.84
30-year endowment	2.20	2.22	2.24	2.27	2.30	2.33	2.36	2.41	2.45	2.50	2.55	2.62	2.68	2.76	2.84	2.93
Endowment age 62	2.27	2.37	2.48	2.60	2.72	2.86	3.01	3.18	3.30	3.56	3.79	4.04	4.31	4.63	4.98	5.39
Term (temporary or wartime)	.72	.73	.74	.75	.76	.77	.79	.81	.82	.84	.87	.89	.92	.95	.99	1.03

The Bureau of War Risk Insurance was established and is conducted for the benefit of our soldiers, sailors and marines. It exists for and because of them, and its sole concern is to serve them promptly, efficiently and with understanding of the needs of each particular case,

R. G. CHOLMELEY-JONES,
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WAR OF THE ROSES. See ENGLAND.

WAR SONGS. See NATIONAL SONGS.

WAR TARIFF. See UNITED STATES — TARIFF.

WAR TOKENS. See TOKEN MONEY.

WAR WOUNDS. The wounds described will be those peculiar to the war of 1914–18. Indeed, they have special characteristics, according to the objects producing them, and cannot be compared with the wounds of preceding wars. In the wars of the last century, 80 per cent were produced by bullets. In the war of 1914–18 80 per cent were caused by pieces of shell, grenades, bombs and torpedoes. We are also confronted with injuries resulting from new chemical compounds, like gas and burns from liquid flame. Wounds by knife, bayonet, sword or lance are rare, while the two most common types of injury-inflicting agents are the bullet and pieces of shell. But besides these, we find other foreign bodies in the wounds. For instance, the projectile may carry a fragment of wood which was in the vicinity of the soldier into the body, or a shell may explode in a group of men, the bones of one man entering the body of another. These projectiles often carry with them pieces of

clothing covered with mud and containing many bacteria. The presence of such foreign bodies is characteristic of shell wounds.

It sometimes happens that a bullet takes along with it a button, or a coin or a metallic piece of a suspender, but this is exceptional. It may happen, also, when the form of the bullet has become changed, by ricochetting, that it will carry with it bits of clothing. But where it strikes directly, it perforates the cloth, piercing its way between the fibres of the tissue, and in this way does not carry along any of the clothing. On the contrary, a piece of shell, always irregular and jagged, cuts the cloth into pieces, which it carries to the bottom of the wound. This cloth is the conveyor of the bacteria into the wound. It can thus readily be seen why a bullet wound is generally uninfected, while that produced by shell is usually infected.

Aside from the element of foreign bodies carried into the wound, there is a big difference between the injury produced by a bullet and that resulting from a piece of shell. The bullet causes only slight damage to the soft tissues, because it advances insinuatingly, pushing the fibres aside without tearing them. The piece of shell tunnels its way through the body, its ragged edges cutting and tearing, producing in this way a kind of pulp out of the contused muscles and cellular tissues torn and detached from the walls of the track. This pulp proves a very good culture medium for the bacteria. The shell fragments are thus not only sources of infection, but are also the purveyors of food for the bacteria which they carry into the wound along with clothing and other foreign bodies.

Upon the bony structure of the body, the bullet inflicts generally more serious injury than does the piece of shell. This is due to the greater velocity of the bullet, which produces considerable pressure in the bone into which it is penetrating, this pressure causing bursting of the bone. The lesser speed with which a piece of shell enters usually prevents bursting of the bone, but it increases the seriousness of the compound fracture by carrying more bacteria.

In present-day warfare every kind of injury can be seen, from a tiny scratch to complete tissue disintegration, but the variety of wounds is less characteristic than their number. The plentiful supply of artillery, with its greater precision, multiplies the injuries. The wounded are numerous and each usually has several wounds: generally not less than two or three, often 10 or 15, sometimes as many as 40 to 70, and even 90. The number of the wounded emphasizes the fact that the injured can no longer be considered by the general staff as a negligible waste, of which little care need be taken, but that it is important to treat them quickly in order to preserve them for a continuance of the struggle.

The characteristic of the clinical evolution of shell wounds is the element of infection. Every disease-producing bacterium may be the agent of this infection. The most dangerous are the tetanus bacillus, gas or Welch bacillus, and the streptococcus. Tetanus was very frequent at the beginning of the late war because of the lack of antitoxin. Later every wounded man was injected with antitoxin and no more tetanus was observed. Gas gangrene is a very serious complication, which manifests itself by the necrosis of the walls of a wound, spreading quickly into the rest of the limb; by the production of gas which distends the tissues and by general poisoning of the injured. Treatment for it is wide opening of the wound, to expose the bacteria to the oxygen of the air, which prevents their development, and the injection of an antitoxin prepared by Bull and Pritchett of the Rockefeller Institute, or by Weinberg in France. Streptococcus is the bacterium of erysipelas. It is one of the most resistant bacteria, and causes serious local and general infection. We have not as yet any specific treatment against it.

But whatever may be the infection, it is possible to subdue it by accurate surgical and antiseptic treatment. This should be done as early as possible, preferably before the first eight hours after the injury. An X-ray picture indicates the bone lesion and also the location of foreign bodies. The operation which follows consists of wide opening of the wound; of the complete excision of the walls of the wound; of the removal of foreign bodies, and of the resection of bone splinters. This mechanical cleansing permits the removal at the same time of any necrotic tissue and bacteria. After this operation it is in many cases possible to close the wound immediately. But if there remains a doubt as to the presence of dangerous bacteria within the injured part, it is preferable to keep the wound open, to make bacteriological examinations and to close it only after knowledge has been obtained of the result of these bacteriological examinations. If a wound is infected, it is best to keep it open and to sterilize it by an antiseptic method, which permits secondary closure after several days.

The old antiseptic methods have proved themselves insufficient. Carrel and Dakin thought that the main reason for the failure of these methods was their inadequate application. Indeed, contact of an antiseptic substance with a wound only once a day produces sterilization for only a few minutes, because the secretions quickly combine with the antiseptic, thereby destroying its efficacy. The Carrel-Dakin method consists of the application, renewed every two hours, of a strong antiseptic, non-toxic and non-caustic, but having the property of dissolving necrotic tissue. This substance must reach every part of the wound, for which purpose tubes especially prepared are placed in all the interstices of the injury, as carriers of the antiseptic fluid.

Experience has shown that with the use of hypochlorite of sodium, in the way described, it is possible quickly to sterilize every kind of wound, and Dehelly and Dumas have shown the feasibility and necessity of closing these wounds after sterilization, instead of allowing them to cicatrize spontaneously.

Dakin and Dunham, endeavoring to simplify the technique, prepared another antiseptic, dichloramine-T dissolved in a chlorinated paraffin oil. This preparation permits the slow decomposition of the antiseptic in contact with the secretions of the wound, thus diminishing the necessity for renewal of the antiseptic on

the surface of the wound. Good results have been reported from the application of this compound.

To resume: Considerable progress was made from the beginning of the war until its close in the treatment of the wounded. This was due, first, to the early treatment of the injured; second, to the conquest of the infection by the Carrel-Dakin method; third, to the perfected surgical cleansing of the wounds; fourth, to the secondary closure proved necessary by Dehelly and Dumas, and, fifth, to the work of Gaudier, showing the possibility of cleansing a wound thoroughly by surgical means and closing it immediately after the first operation. The result of this progress was that 80 per cent of the wounded were returned without disability and after short period of treatment to the active military forces.

WAR ZONES. Among the many circumstances which distinguished the late war from all others of the past was the practice of belligerents in treating certain areas of the ocean as "war zones" and asserting belligerent rights within such waters which are inconsistent with the long-recognized principle of the freedom of the seas. At the very outbreak of the war, between Great Britain and Germany the German Admiralty was guilty of planting submarine mines in open waters of the North Sea in consequence of which a goodly number of merchant and fishing vessels were destroyed. The British Admiralty at first refrained from this procedure, but on 2 Oct, 1914, in consequence of the policy of the German admiralty, it announced that it had as a counter measure authorized "a mine laying policy in certain areas," and that a "system of mine fields had been established and is being developed on a considerable scale." Notice was, therefore, given that within certain areas of the North Sea it would be dangerous for ships to navigate. In the following month the British Admiralty announced that in consequence of Germany's having scattered mines indiscriminately on the trade routes from America to Liverpool, the whole of the North Sea must be considered as a "military area" within which shipping of all kinds would be exposed to the gravest danger from mines which it had been necessary to lay as a counter measure. Lanes of safety, however, were provided and directions were issued to enable neutral vessels to navigate the North Sea without exposure to destruction. The British mine field was extended or contracted by successive notices issued by the Admiralty from time to time throughout the succeeding years of the war.

By a memorandum of 4 Feb. 1915 the German government charging Great Britain with various violations of international law and declaring that it had in vain called the attention of neutral governments to these violations, proclaimed that the waters around Great Britain, including the whole of the English Channel, were a "war zone" within which after 18 February all enemy merchant vessels would be destroyed. even if it were not always possible to save their crews and passengers. It was also added that in consequence of the misuse of neutral flags by British masters, neutral vessels navigating such waters would be exposed to the danger of destruction. The principal difference between the so-called "danger area" proclaimed by Great Britain and the German "war zone" was that nothing was said in the British proclamation regarding the possible sinking of neutral vessels; on the contrary, it left certain routes open and undertook to guarantee neutral vessels against destruction from English mines by furnishing their masters with sailing directions which if followed would insure their safety. In fact, it does not appear that any neutral vessel was ever destroyed or injured by a British mine while navigating the dangerous area. Aside, therefore, from the delays and inconveniences to which neutrals were subjected in the exercise of the right to navigate the high seas, the British measure was unobjectionable. The German proclamation involved a much more serious encroachment upon neutral rights since it not only exposed neutral vessels navigating the war zone to destruction, but it similarly exposed neutral persons innocently traveling on belligerent merchant vessels within the zone, since it was the avowed intention of the German government to sink such vessels, even when it was not possible to provide for the safety of their crews and passengers. It is one thing for a belligerent to plant mines in the open seas for the sole purpose of preventing the approach to its coasts of enemy war ships, when precautions are taken to protect neutral vessels against destruction therein; it is a very different thing for a belligerent to proclaim a portion of the sea to be a war zone and announce that all enemy merchant vessels encountered within such zone shall be destroyed, even when provision cannot be made for the safety of crews and passengers and without taking steps to prevent the destruction of neutral vessels therein by providing them with sailing directions enabling them to make their way safely enough through the forbidden zone.

In January 1917, the German government went still further, and after abrogating its previous pledges to the United States in regard to the sinking of merchant vessels (see SUBMARINE WARFARE) proclaimed a new war zone embracing the whole North Sea, including the waters around the British Isles, extending north to the Faroe Islands, westward from France and England about 500 miles and southward to within a few miles of the coast of Spain. A large portion of the Mediterranean Sea was also included within the area. This vast expanse of ocean embracing more than a million square miles was declared to be a "barred" or "blockaded" zone within which after 1 February all sea traffic would if possible be prevented by means of mines and submarine torpedo boats. As a special concession to the United States a narrow lane extending westward from Falmouth through the zone was to be left open for the passage of one American steamer per week, provided it arrived at Falmouth on Sunday and departed on Wednesday, and provided it had vertical stripes three metres broad painted on its sides and carried a large flag of checkered red and white at the mast end and the American flag at the stern. Within this zone all other merchant vessels, belligerent and neutral alike, were to be sunk

without warning and without provision for the safety of the crews and passengers. This extraordinary measure was avowedly adopted as an act of reprisal against Great Britain for various acts, the chief of which was the alleged attempt of the British government to starve the German nation by means of an unlawful blockade. It was also justified on the ground that the governments of the Entente powers had "bluntly refused" to consider Germany's peace offer. Finally, it was added that the measure would result in "a speedy termination of the war and the restoration of peace which the United States had so much at heart." The assertion of the right to close a vast area of the open seas to neutral navigation and the threat to destroy neutral vessels which dared to traverse it was so manifestly contrary to the long-established doctrine of the freedom of the seas for which the German government pretended to be fighting that it would be a waste of time to argue the question. It was, as the President of the United States aptly declared, a declaration of war against the world and against humanity itself. Various neutral governments vigorously protested and the action of the German government in proceeding to put the decree into effect was one of the chief causes which led the United States to declare war against Germany in April 1917.

Aside from the action of the Japanese government in proclaiming in January 1904 certain "strategic areas" in and adjacent to its own territorial waters there is nothing analogous in the slightest degree to the war zone decree of either Great Britain or Germany in any previous war. It has long been a recognized rule of the law of nations that a belligerent has no right to close any portion of the high seas to neutral navigation or to interfere with neutral vessels traversing them further than such as is incidental to the right of search, visit or blockade, or in pursuance of the right of a belligerent to intercept the carriage of contraband to the enemy.

A belligerent may, of course, engage the enemy in battle and prey upon his commerce anywhere on the high seas. He may even warn neutrals that within a certain area of the sea which is likely to become an immediate theatre of naval operations their vessels will be exposed to destruction in the same way that a non-combatant individual who in land warfare strays into the military lines will be exposed to danger, and if they disregard the warning and are unavoidably destroyed or injured in consequence of their presence in such theatre of operations it is doubtful whether the belligerent from whom they suffer can justly be held responsible. But it is a very different thing for a belligerent to proclaim an immense area of the ocean which by reason of the extent of such area cannot be made a theatre of immediate hostilities to be a barred or closed zone and to destroy neutral vessels engaged in peacefully navigating such waters. The action of the British government in proclaiming the North Sea to be a military area in which mines were planted on an extensive scale was itself an infringement upon the principle of freedom of the seas, but for the reasons mentioned above it was far less objectionable than the German war zone decree of January 1917. It is difficult to see how the German measure can be defended on grounds of international law.

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WAR OF 1812, General Society of, a patriotic society founded in 1894, its membership being open to the male descendants over 21 years of age of any one who fought in the army or navy in the War of 1812. In case of there being no lineal male descendant one representative of a collateral line may be admitted to membership. The society was organized by members of the Association of the Defenders of Baltimore in 1814, and by the Pennsylvania Association of the Defenders of the Country in the War of 1812, and has now State branches in Massachusetts, Connecticut, the District of Columbia, New York, New Jersey and Delaware. Its president in 1918 was John Cadwalader. Its headquarters are at Boston, and its membership in 1918 was 575.

WAR OF 1812, Military Society of, a patriotic society founded in New York, 3 Jan. 1826. It admitted to membership officers of the regular army, navy and volunteer services who had served in the War of 1812. It was consolidated 8 Jan. 1848 with the Veteran Corps of Artillery, a society of the Revolutionary War which was organized in New York 25 Nov. 1790. At that time it adopted the name as well as the ruling of the Veteran Corps of Artillery concerning membership, extending it to male descendants of the officers of both the Revolutionary War and the War of 1812. Its last survivor of the Revolution was Daniel Spencer, d. 4 March 1854; its last survivor of the War of 1812 was Hiram Cronk, d. 13 May 1905.

WARBECK, wâr'bĕk, Perkin, pretender to the throne of England in the reign of Henry VII: b. Tournay, about 1475; d. London, 23 Nov. 1499. He was the son of a Jew of Tournay, and appears in history in 1490, when he was attached to the court of Margaret, dowager Duchess of Burgundy. At the court he was taught to represent Richard, Duke of York, younger brother of Edward V, one of the princes generally supposed to have been murdered by their uncle, Richard of Gloster, in the tower. In 1492, when there was prospect of a war between France and England, Warbeck landed at Cork, and was joined by numerous partisans. At the invitation of Charles VIII he went to the court of France, where he was acknowledged as Duke of York, received a pension and was attended by a body guard. At the Peace of Estaples he was dismissed from France and went to Flanders,

where he was received by the Duchess of Burgundy as her nephew. The belief in the truth of his claim was shared by the populace of England, and certain of the nobility, and some of them openly declared for him. He was, however, taken prisoner after an invasion of Cornwall 1497, tried for high treason and hanged at Tyburn.

WARBLERS, a popular name applied in different countries to a variety of small insectivorous birds belonging to quite distinct families, but resembling one another in habits and appearance. The American warblers, to which the book name «wood-warblers» is often given, belong to the extensive family *Mniotiltidæ* and include a varied assemblage of generic types somewhat closely related to the tanagers (*Tanagridæ*). They are small birds, with one or two exceptions about five inches in length. Their colors are bright and varied, yellow often predominating, with patches of red, blue, brown, black or white in conspicuous places; but the females are often plain and often closely resemble one another in the different species. The bill varies, but is generally rather slender, pointed, slightly curved and without a hooked tip, a tooth or a deep notch; the feet are rather small with scutellate tarsi and present no positive characters; the primary wing-quills are nine, the secondaries are not elongated and the tail-quills are 12 in number. Owing to the great diversity of the genera it is practically impossible to give any brief definition covering all. Various groupings of the genera into subfamilies have been proposed, but with the exception of the well-marked *Icteriinæ*, which are decidedly aberrant, they all intergrade more or less easily. A division such as follows is convenient and fairly natural. The typical warblers (*Sylvicolinæ*) have the wings nearly always longer than the tail, the bill slender and conical, with the commissure slightly curved and the rictal bristles short or wanting. The flycatching warblers (*Setophaginæ*) have similar wings and tail, with the bill broad and flattened at the base, the commissure slightly curved and the rictal bristles numerous and very long. The chats (*Icteriinæ*) have the wings shorter than the tail, the bill high, compressed and stout, with strongly curved commissure and no rictal bristles. They are much larger than any of the members of the other subfamilies. There are, in round numbers, about 130 species of known warblers, strictly confined to America; the flycatching warblers being found in greatest variety and abundance in northern South America, Central America and the West Indies, while the *Sylvicolinæ* are pre-eminently characteristic of North America.

Warblers are all insectivorous and migratory, chiefly inhabitants of the woods and thickets and because of their varied habits and great abundance among the most interesting of our birds. They build on the ground, in bushes, in crevices or high up in tall trees, nests exhibiting a great diversity in material and architecture. The name warbler probably alludes to their constancy rather than to their ability as musicians, for their songs, though attractive and interesting, are, with a few exceptions, not highly melodious. The varied rôle played by warblers in nature has been well expressed by Dr. Coues in the following poetic passage: "The warblers have we always with us, all in their own good time; they come out of the South, pass on, return and are away again; their appearance and withdrawal scarcely less than a mystery; many stay with us all summer long, and some brave the winters in our midst. Some of these slight creatures, guided by unerring instinct, travel true to the meridian in the hours of darkness, slipping past 'like a thief in the night,' stopping at daybreak from their lofty flights to rest and recruit for the next stage of the journey. Others pass more leisurely from tree to tree, in a ceaseless tide of migration, gleaning as they go; the hardier males, in full song and plumage, lead the way for the weaker females and yearlings. With tireless industry do the warblers befriend the human race; their unconscious zeal plays due part in the nice adjustment of Nature's forces, helping to bring about that balance of vegetable and insect life without which agriculture would be in vain. They visit the orchard when the apple and pear, the peach, plum and cherry are in bloom, seeming to revel carelessly amid the sweet-scented and deliciously tinted blossoms, but never faltering in their good work. They peer into the crevices of the bark, scrutinize each leaf, and explore the very heart of the buds, to detect, drag forth and destroy those tiny creatures, singly insignificant, collectively a scourge, which prey upon the hopes of the fruit-grower, and which, if undisturbed, would bring his care to naught. Some warblers flit incessantly in the terminal foliage of the tallest trees; others hug close to the scored trunks and gnarled boughs of the forest kings; some peep from the thicket, the coppice, the impenetrable mantle of shrubbery that decks tiny water courses, playing hide-and-seek with all comers; others, more humble still, descend to the ground, where they glide with pretty mincing steps and affected turning of the head this way and that, their delicate flesh-tinted feet just stirring the layer of withered leaves with which a past season carpeted the ground. We seek warblers everywhere in their season; we shall find them a continual surprise."

Of the Sylvicolinæ nine genera and 46 species are North American, the principal genera being *Dendroica*, the largest by far, *Helminthophila* and *Geothlypis*. The diagnostic colors of many are sufficiently indicated by their vernacular names, which, however, are generally descriptive of the full-plumaged males only. The black and white creeping warbler (*Mniotilta varia*) has the sexes similarly colored and is a common migratory woodland species throughout eastern North America, breeding from Virginia northward and wintering from the Gulf Coast into South America. In feeding habits it resembles the brown creeper rather than the other warblers, climbing the tree trunks and larger branches by clinging to the bark, searching the crevices for insects and their eggs, but not using the tail as a prop. The song is a feeble unmusical trill, but the call notes are varied. A simple nest on the ground of bark, moss, grass, etc., contains four or five eggs, white with profuse reddish-brown spots. *Protonotaria* includes only *P. citrea*, the prothonotary warbler, a beautiful species whose prevailing color in both sexes is golden with

olivaceous and bluish above and the tail-quills largely white; the bill is unusually long, acute and black. It breeds in most of the United States east of Nebraska, but is rare in the East north of Virginia. It haunts swampy woods and thickets and nests in holes of trees. An interesting species of striking aspect is the worm-eating warbler (*Helmintherus vermivorus*), with a stout acute bill without bristles, a very short tail and strong feet. In both sexes the back is olivaceous, the under parts buff and the head conspicuously marked with four longitudinal black stripes. A common bird of the eastern United States west to Nebraska and north to southern New England, breeding over this range and wintering in the Antilles and northern South America. It is a bird of the woodland undergrowths and nests on the ground, the four or five eggs being brilliant white with fine dots of reddish brown. The popular name is a misnomer as it does not feed on worms but chiefly on caterpillars and spiders. The best known of the *Helminthophilæ* is the blue-winged yellow warbler (*H. pinus*) having about the limits of range of the last and much resembling it in habits though they are more active and arboreal and often frequent the shrubbery of parks and well-kept grounds. The Nashville warbler (*H. ruficapilla*) is a plain species; the males in breeding-dress olive above, yellow below, the latter remaining even in the duller autumn colors. Except in the extreme Northern States this species is a migrant only, but very common in the United States, breeds in the British provinces and winters in Mexico and Central America. This genus also includes the golden-winged, Tennessee and orange-crowned warblers of the eastern United States and several western species, besides some rarities which are supposed to be hybrids. No warbler is better known than the little gaily-dressed parula or blue-yellow-backed warbler (*Compsothlypis americana*) which breeds in the United States and lower Canada west to the great plains and winters in the West Indies and Central America. They are very common in open woods during the migrations and distributed more locally in swampy districts and river valleys during the breeding period, probably attracted by the abundance of the long-stemmed *Usnea* or "Spanish moss," of which their beautiful, usually globular hanging nests, are in chief part constructed. Like the *Dendroicas* they are true tree-warblers, incessantly flitting about the outermost twigs, turning and hanging in every conceivable attitude and often taking short flights in pursuit of flying insects.

Dendroica comprises 24 species of the warblers found within our limits. Most of them glean for their food in the terminal twigs of trees much as does the parula and like it their songs are simple feeble trills. They come in troops when the forest trees are bursting into leaf in May and most of them pass to the British provinces or at least to the northern woods and high mountain ridges to breed, but a few, like the yellow warbler, remain through the summer. With few exceptions they never nest on the ground. The males in breeding plumage are handsomely and variously colored, but nearly always have much white on the tail quills, the female, young and male autumn plumage is generally very different. One of the best known but hardly a good representative example is the yellow or summer warbler (*D. æstiva*), one of the few species which has an extensive breeding range in the United States. It is abundant almost everywhere in North America and its warm glowing yellow color and the absence of white from the tail are diagnostic. It is less of a woodland bird than many of the others and frequents orchards, parks and roadside thickets, building a pretty nest, compactly felted of soft vegetable fibres, bits of wool, paper, etc., securely wedged in the upright fork of a bush or low tree. More than one brood of four or five young is sometimes raised and these birds often outwit the cowbird which drops an egg in their nests by covering the intruder with a false floor and hatching their own brood above it. The spring song of the yellow warbler is very sprightly. Other species which breed over considerable areas in the United States are the cerulean warbler (*D. cærulea*), chestnut-sided warbler (*D. pennsylvanica*), yellow-throated warbler (*D. dominica*), pine warbler (*D. vigorsii*), and prairie warbler (*D. discolor*) in the East and the black-throated gray warbler (*D. nigrescens*), Townsend's warbler (*D. townsendi*), hermit warbler (*D. accidentalis*) and golden-cheeked warbler (*D. chrysoparia*) in the West. Well-known migrant species, which breed in Canada and more or less in our northern border States and along the high mountain ridge southward even to North Carolina and Georgia, are the Cape May warbler (*D. tigrina*), black-throated blue warbler (*D. cærulescens*), yellow-rumped or myrtle warbler (*D. coronata*), which lingers into the winter even in the latitude of Philadelphia, magnolia warbler (*D. maculosa*), bay-breasted warbler (*D. castanea*), the beautiful black and orange Blackburn's warbler (*D. blackburniæ*), black throated green warbler (*D. virens*) and the Eastern palm warbler (*D. palmarum hypochrysea*).

Very distinct in appearance from all of the above are the members of the genus *Seiurus*, of ground-loving habits and thrush-like plumage, brownish above and streaked or spotted below. We have three species. The golden-crowned thrush or oven-bird (*S. aurocapillus*) slightly exceeds six inches in length, and both sexes are of a rather bright olive color above, with a golden crown-streak bounded by black. It inhabits the greater part of North America and breeds from Virginia and Kansas northward, building its over-arched nest of leaves and grasses on the ground and laying therein four to six white eggs thickly speckled with brown and lilac. The oven-bird is very common in the summer in the New England and Middle States, inhabiting low damp woods and living mostly on or near the ground, searching for its chiefly insect food among the fallen leaves. Besides its ordinary loud clear whistled song, it has an exquisitely sweet nuptial song seldom heard. The common water-thrush or water-wagtail (*S. noveboracensis*) is slightly smaller and of a nearly uniform rich olive-brown above, pale yellow, streaked with brown below. Its breeding range is northerly in the eastern United States to Illinois and to the Arctic, and it winters in middle America. The water-thrush inhabits woodlands in the vicinity

of streams and swamps and resembles the wagtails in its habit of wading and raising the tail to balance the body on its insecure footing. The nest of leaves, grasses and fine roots is built on the ground in the shelter of a log and the crystalline white eggs profusely speckled with brown number four to six. A related species of similar habits, the large-billed or Louisiana water-thrush (*S. motacilla*), is more southern in range but very similar in appearance. Both are exquisite songsters.

Geothlypis contains a group of ground-warblers with the feet stout and the wings generally very short and exceeded in length by the tail. A typical, very common and wide-ranging species is the Maryland yellowthroat (*G. trichas*) which breeds from Georgia to Labrador. The male is a handsome bird, olive above, chiefly clear yellow below, the face with a broad rich black mask which the female lacks. It lives in thickets and shrubbery, especially where the ground is low and wet. The nest is skilfully concealed in tufts of herbage on the ground and is constructed of leaves, twigs, grass, rootlets, etc. The four to six eggs are white and rather sparingly spotted about the large end with brown. The song is a loud, clear, lively whistle sung with great energy. A related species is the Kentucky warbler (*G. formosa*), which differs in having in place of the black mask a black crown and a black bar running obliquely downward and backward from the eye and between them a yellow superciliary stripe. It is more southern than the yellowthroat, but breeds throughout the eastern United States. Much less common than the yellowthroat its habits are essentially similar, but it is a bird more of the woodland borders and underbrush than of the swampy thickets. Other species are the mourning warbler (*G. philadelphia*), the Connecticut warbler (*G. agilis*) and several southern and western species closely similar to the Maryland yellowthroat.

Coming now to the *Setophaginæ*, we find five genera and 10 species recorded as North American, six of which are Mexican and scarcely or not at all cross the borders of the United States. The remaining four are generally common eastern birds. Typical of the subfamily is the redstart (*Setophaga ruticilla*), not at all related to the redstart of Europe. The male is a handsome bird of lustrous black plumage, the belly white, and the wing lining, a patch on the primaries and one on each side of the tail quills of rich orange which appears and disappears as the bird opens and closes these parts in its never-ceasing activity in the pursuit of insects among the outer foliage of trees and the surrounding air. As a catcher of flying insects the redstart is very skilful; its song is lively and pleasing and its nest a neatly felted cup of soft vegetable fibres in an upright fork of a small tree. It is found throughout most of North America and breeds in the northern half of the United States and in Canada. The Canadian fly-catching warbler (*Sylvania canadensis*) is bluish ash above, rich yellow below, with numerous small black streaks on the crown and more distinct ones on the throat, and a black band running backward from the eye. This handsome species is found from the base of the Rocky Mountains eastward and breeds from southern New England and New York to Newfoundland. It is abundant during the migrations and spends much of its time making short flights to secure passing insects, from which it immediately returns to its unending activity in the higher branches of the trees. The nest is on the ground and the eggs of the usual warbler type. Two related species are the hooded warbler (*S. mitrata*) and the black-capped warbler (*S. pusilla*), both chiefly yellow, the first with a black cap and throat and a rich yellow face mask, the last smaller and with the black confined to the crown. The hooded warbler is chiefly southerly and hardly reaches the northern limits of the United States, but breeds southward to the Gulf Coast, building its nest in low bushes. The black-cap, on the other hand, is even more northerly and has a wider western range than the Canadian warbler, but like it nests on the ground.

Of the *Icteriinæ* our fauna contains but a single genus and species, the yellow-breasted chat (*Icteria virens*), isolated in structure and standing quite apart from the other warblers; and in manners equally unique. The length is about seven and one-half inches, the color clear olive-green above; the throat, breast and sides bright rich yellow; the belly, superciliary and maxillary stripes and a spot below the eye, white; the cheeks and lores black and the bill blue-black. The form is stout and the wings much shorter than the tail. In two subspecies the yellow-breasted chat inhabits the entire United States except the northern tier. It is locally abundant, living in tangled thickets on warm hillsides and sheltered valleys, and building a loose but pretty nest of leaves, plant stems, strips of bark and grass in the thickest patches of briers, often in association with many of its fellows. The eggs, which are about an inch long by four-fifths of an inch in diameter, are usually three or four in number, variously spotted and blotched with brown and lilac. The chats are among the most remarkable of our songsters, but have no definite song, producing a constant succession of extraordinary sounds with much force and expression. Some are clear whistles endlessly modulated and combined, some are hoarse guttural notes, some sharp, coughing sounds, some cat-like mews, some are original, others imitated, but all are uttered with a vehemence and abandon that is quite inimitable. Few birds surpass the chat in imitative or ventriloquistic powers and few combine their nuptial song, which is heard both by night and day, with such a series of grotesque aerial antics.

The warblers of Europe belong to the family *Sylviidæ*, related to the thrushes and by many ornithologists combined with these and other birds in the family *Turdidæ* used in a wide sense. The *Sylviidæ* have the bill of moderate length and slender form, broad at the base and tapering toward the extremity. The tip of the upper mandible is curved downwards, and is slightly notched. The wings are elongated with 10 primaries and the tail has often only 10 quills, the tarsi long and slender. The family includes a variety of sub-families and a large number of genera, presenting quite as varied an array of structures and habits as do the *Mniotiltidæ* and quite as difficult to classify. All are small insectivorous and mostly plain-colored birds. They are especially characteristic of Eurasia, though some breed in Australia, New Zealand and the Polynesian Islands.

Regulus and *Phyllopneustes* inhabit North America. To this group belongs the genus *Sylvia*, represented by such forms as the whitethroat (*Sylvia undata*), garden warbler (*S. hortensis*), chiff-chaff (*S. rufa*), and other equally notable species elsewhere described.

Besides an Asiatic species (*Phyllopneustes borealis*) which extends its breeding range into Alaska the only North American representatives of this very extensive family are four species of *Regulus*, diminutive little birds known as kinglets (q.v.). The dainty little gnatcatchers (q.v.), of which three species are North American, and which with their allies form the family *Polioptilidæ*, are very closely related to the *Sylviidæ*. Some of the flycatching *Muscicapidæ* are called warblers in Australia.

Consult Baird, Brewer and Ridgway, 'North American Birds' (1874); Coues, 'Key to North American Birds' (Boston 1903); Ridgway, 'Birds of North and Middle America' (Washington 1902); Wilson, 'American Ornithology' (Philadelphia 1814); Jones, 'Songs of the Warblers' (Oberlin 1900); Dresser, 'Birds of Europe' (London 1881); Chapman, 'Warblers of North America' (New York 1907).

J. PERCY MOORE,
University of Pennsylvania.

WARBLES, in cattle. See OX-BOT.

WARBURG, Paul Moritz, American banker: b. Hamburg, Germany, 10 Aug. 1868. He was educated at the Realgymnasium, Hamburg, later studied in France and England and traveled widely. He entered his father's banking business at Hamburg in 1894; and for several years after 1902 he was a member of the banking firm of Kuhn, Loeb and Company, New York, as well as serving as director for various banks, trust companies, railroads and other organizations. He was an earnest advocate of a central banking system in the United States, and in 1914 he was appointed by President Wilson a member of the newly-formed Federal Reserve Board, whereupon he resigned his directorships and similar connections. Upon the expiration of his term in 1918 he insisted upon retiring, owing to criticism directed at his German birth. He was active on various committees in connection with the European War. Author of 'Essays on Banking Reform in the United States' (1914).

WARBURTON, Alexander Bannerman, Canadian statesman: b. Charlottetown, Prince Edward Island, 5 April 1852. He was graduated at King's College, Windsor, Nova Scotia, in 1874, and later studied at the University of Edinburgh. He was called to the bar in 1879 and engaged in practice at Charlottetown. He was elected to the legislature of Nova Scotia in 1891; served as premier in 1897–98; and in 1898–1904 was judge of Queen's County Court. He was elected to the Dominion Parliament in 1908. He is a governor of King's College, Windsor, and is known as a writer on political subjects, and on the history of Prince Edward Island, forestry, education and other subjects.

WARBURTON, Bartholomew Elliott George (ELIOT WARBURTON), Irish author: b. near Tullamore, King's County, 1810; d. at sea, 4 Jan. 1852. He was educated at Trinity College, Cambridge, and was called to the bar of Ireland in 1837. Later, however, he abandoned law for travel and literary pursuits. He achieved a great success with his first book, 'The Crescent and the Cross' (1844; dated 1845), a narrative of his travels in 1843 through Turkey, Syria, Palestine and Egypt. It passed rapidly through many editions, sharing honors with Kinglake's 'Eothen' of the same year. He was an earnest advocate of annexation of Egypt by England, and his writings on the East possessed a great popular appeal. In 1851 the Atlantic and Pacific Junction Company appointed him its special representative to secure friendly relations with the natives of the Isthmus of the Peninsula of Darien, but he perished at sea when the steamship *Amazon* burned and sank 4 Jan. 1852. He was also author of 'The Memoir of Prince Rupert and the Cavaliers' (1849); the novels 'Reginald Hastings' (1850); 'Darien, or the Merchant Prince' (1851), etc.

WARBURTON, William, English prelate: b. Newark-upon-Trent, Nottinghamshire, 24 Dec. 1698; d. Gloucester, 7 Jan. 1779. He studied law and practised in Newark, but soon gave up his profession and in 1723 took orders in the English Church, becoming rector of Brant Broughton, Lincolnshire, in 1728. In 1726 he formed an aquaintance with Theobald, to whose edition of Shakespeare he contributed. In 1727 he began to distinguish himself as an original writer by his inquiry into the 'Causes of Prodigies and Miracles,' and in 1736 appeared his 'Alliance between Church and State, or the Necessity and Equity of an Established Religion and Test Law.' The first volume of his chief work was published in 1737, entitled 'The Divine Legation of Moses demonstrated on the Principles of a Religious Deist from the Omission of the Doctrine of a Future State of Rewards and Punishments in the Jewish Dispensation.' This paradoxical performance met with adversaries among all parties, who concurred in criticising and censuring the theory on which it is founded, and he replied to his critics in a vindication of his opinions. Having published in the journal called the *Works of the Learned*, in 1739 and 1740, a defense of the 'Essay on Man' against the remarks of De Crousaz of Geneva, Pope acknowledged his obligations to Warburton, and an intimacy was established. On his death in 1744 Pope bequeathed to Warburton half his library and the copyright of such of his works already printed as were not otherwise disposed of. In 1747 Warburton appeared as the editor of Shakespeare and proved himself to be but a poor commentator. In 1750 appeared 'Julian, or a Discourse concerning the Earthquake and Fiery Eruption which defeated that Emperor's Attempt to rebuild the Temple, elicited by Middleton's Inquiry concerning the Miraculous Powers of the Christian Church.' In 1757 he became dean of Bristol, and two years after bishop of Gloucester. In 1768 he established a lecture at Lincoln's Inn on the evidence in favor of Christianity from the prophecies of the Old and New Testaments. His collected works were published by Hurd in 1788. Consult the biography of Watson (1863); and Mark Pattison, 'Essays' (1889).

WARD, wârd, SIR **Adolphus William,** English historian: b. Hampstead, 2 Dec. 1837. He was graduated from Peterhouse College, Cambridge, and became a Fellow of his college. In 1866 he was appointed professor of

history and English literature in Owens College, Manchester, an institution of which he was principal from 1888 until his resignation in 1897. He took a leading part in the movement for the foundation of Victoria University, and in 1900 became master of Peterhouse. He was knighted in 1913, after serving two years as president of the British Academy. He published a translation of Curtius' 'History of Greece' (1868–73), and in 1875 his valuable 'History of English Dramatic Literature to the Death of Queen Anne' appeared (new ed., 1899). Among his other works are 'The House of Austria in the Thirty Years' War' (1869); 'Chaucer' (1880) and 'Dickens' (1882) in 'English Men of Letters' series; 'The Counter-Reformation' (1888); 'Sir Henry Wotton' (1897); 'Great Britain and Hanover' (1899); 'The Electress Sophia and the Hanoverian Succession' (1903; 2d ed., 1909); 'Lillo's London Merchant and Fatal Curiosity' (1906); 'Germany' (Vol. I, 1916; Vol. II, 1917) and numerous contributions to the 'Encyclopædia Britannica,' the 'Dictionary of National Biography,' 'Cambridge Modern History' and 'Cambridge History of English Literature.'

WARD, Artemas, American general: b. Shrewsbury, Mass., 1727; d. there, 28 Oct. 1800. He was graduated at Harvard College in 1748; early entered public life as a representative to the General Court; became a member of the executive council and a justice of the Court of Common Pleas of Worcester County. In the French and Indian War he served as lieutenant-colonel under Abercrombie and at the opening of the Revolutionary War was in command of the besieging forces at Boston till the arrival of Washington, after which he was stationed with the right wing on Roxbury Heights. He resigned his commission of major-general, in April 1776, but at the request of Washington continued to serve till the end of May. He was president of the Massachusetts executive council in 1777, a member of the legislature for 16 years and sat in Congress 1780–81 and 1791–95.

WARD, Artemus. See BROWNE, CHARLES FARRAR.

WARD, Bernard (Nicolas), English Roman Catholic bishop: b. Old Hall, Hertfordshire, 4 Feb. 1857. He was educated at Saint Edmund's College, Old Hall, and at Oscott College, Birmingham, and was ordained priest in 1882. He served as a master at both Saint Edmond's and Oscott colleges, and in 1893–1916 was president of Oscott. He was rector of Holy Trinity, Brook Green, in 1916–17. He was appointed domestic prelate to the Pope in 1895; Roman Catholic canon of Westminster in 1903; and since 1917 he has been bishop of Brentwood. Author of 'History of Saint Edmund's College' (1893); 'Life of Saint Edmund of Canterbury' (1903); 'Catholic London a Century Ago' (1905); 'The Eve of Catholic Emancipation' (3 vols., 1911–12); 'The Sequel to Catholic Emancipation' (2 vols., 1915), etc.

WARD, Edgar Melville: b. Urbana, Ohio, 24 Feb. 1839; d. 1915. He was graduated at Miami University; proceeded to study art at the National Academy of New York 1870–71 and subsequently spent six years in France (1872–78). He was a favorite genre painter and among his pictures are 'The Sabot Maker'; 'Brittany Washwoman'; 'The Quilting Party'; and 'The Coppersmith,' the latter being in the Metropolitan Museum, New York. He was made a National Academician in 1883 and subsequently was elected professor in the National Academy.

WARD, Edward Matthew, English painter: b. Pimlico, London, 14 July 1816; d. Slough, 15 Jan. 1879. His first studies were pursued in the studio of John Cawse, London, and in 1835 he entered the Royal Academy schools. During the three years 1836–39 he was in Paris, Venice and Rome, and studied fresco-painting with Cornelius at Munich. His first noteworthy picture was 'Cimabue and Giotto,' exhibited at the Royal Academy (1839). From that time he was a regular contributor to the Academy's annual exhibition, and in 1855 was elected academician. In 1853 he was commissioned to paint eight pictures for the corridor of the House of Commons. He died from the effects of a self-inflicted wound. His numerous oil paintings were historical and genre, and among the best of them are 'Dr. Johnson reading the Manuscript of the Vicar of Wakefield' (1843); 'A Scene from the Early Life of Goldsmith' (1844); 'A Scene in Lord Chesterfield's Anteroom in 1748' (1845), now in the Tate Gallery; 'Charles II and Nell Gwyn' (1848), in the South Kensington Museum; 'The Royal Family of France in the Temple' (1851); 'Charlotte Corday going to Execution' (1852); the 'Antechamber at Whitehall during the Dying Moments of Charles II' (1861); 'Hogarth's Studio, 1739' (1863); 'Luther's First Study of the Bible' (1869), now owned by the British and Foreign Bible Society; 'The Eve of Saint Bartholomew' (1873); 'Marie Antoinette in the Conciergerie' (1874), etc. Many of these are well known in engravings. Consult Dafforne, 'Life and Works of E. W. Ward' (1879).

WARD, Elizabeth Stuart Phelps, American novelist and poet, daughter of Austin Phelps (q.v.): b. Andover, Mass., 31 Aug. 1844; d. Newton, Mass., 28 Jan. 1910. In 1888 she was married to H. D. Ward (q.v.), with whom she sometimes collaborated. Her first work to attract attention was 'The Gates Ajar' (1868), which had a very wide reading and was instrumental in substituting reasonable healthy views concerning a future existence in place of the vague and conventional ideas on the subject then prevalent in religious circles. Among her later works were 'Men, Women and Ghosts' (1869); 'The Silent Partner' (1870); 'Hedged in' (1870); 'The Story of Avis' (1877); 'Beyond the Gates' (1883); 'Dr. Zay' (1884); 'The Gates Between' (1887); 'Poetic Studies,' verse (1875); 'Songs of the Silent World' (1884); 'The Struggle for Immortality' (1889), a volume of essays; 'A Singular Life' (1895); 'The Story of Jesus Christ' (1897)

WARD, Frederick Townsend, American military leader in China: b. Salem, Mass., 29 Nov. 1831; d. Ningpo, China, 21 Sept. 1862. He served in the French army in the Crimean War and later was for a time a ship broker in New York. The Taiping Rebellion in China enlisted his interest in 1860 and he went to Shanghai. There he gathered a band of adventurous spirits of various nationalities and approached the local Chinese authorities with an offer to capture the city of Sungkiang in

return for a large sum of money. The city was held by about 10,000 rebels, but Ward made good his offer to take it and not only received his monetary reward but was made a mandarin of the fourth class. He cleared the country about Shanghai of rebels, receiving a monetary reward for each victory and later organized and drilled three regiments of native troops. With this force he met and defeated a superior force of rebels, saving Shanghai from capture and later clearing a 30-mile belt around the city. From this time he was taken into the confidence and esteem of the French and English officers on duty there and who had hitherto considered him merely an adventurer. He was made a mandarin of the highest rank, married a Chinese woman and was appointed admiral-general by the emperor. He was killed in a skirmish at Ningpo at a time when he was making arrangements to return to the United States to take part in the Civil War. His admirably trained and disciplined military force afterward became the nucleus of Gordon's famous "Ever Victorious Army" and he was generally regarded as a military genius. He was honored by the Chinese with burial in the Confucian Cemetery at Ningpo, where a great mausoleum was erected to him; and monuments also were erected at the scenes of his important victories.

WARD, Henry Augustus, American naturalist: b. Rochester, N. Y., 9 March 1834; d. Buffalo, N. Y., 4 July 1906. He was educated at Williams College and at the Lawrence Scientific School at Harvard, where he was assistant to Professor Agassiz. He studied in Paris and traveled through Europe and the Orient in 1855–59; occupied the chair of natural sciences at Rochester University in 1860–65; and in 1866–69 was manager of gold mines in Montana and South Carolina. He traveled in various countries between 1870 and 1900 collecting cabinets of mineralogy and geology, which he distributed among the colleges and universities of the United States. He founded at Rochester Ward's Natural Science Establishment, was naturalist to the United States expedition to Santo Domingo in 1871 and published 'Notices of the Megatherium Cuvieri' and 'Description of the Most Celebrated Fossil Animals in the Royal Museums of Europe.'

WARD, Herbert Dickinson, American author, son of W. H. Ward (q.v.): b. Waltham, Mass., 30 June 1861. He was graduated from Amherst and in 1888 was married to Elizabeth Stuart Phelps (q.v.) with whom he wrote 'The Master of the Magicians' (1890); and 'Come Forth' (1890). Among works of which he is sole author are 'The New Senior at Andover'; 'The Burglar who Moved Paradise' (1897); 'The White Crown and Other Stories' (1894); 'The Light of the World' (1901); 'A Dart to the Pole'; 'Love Letters of an American Girl.'

WARD, Mrs. Humphry. See WARD, MARY AUGUSTA ARNOLD.

WARD, James, English artist: b. London, 23 Oct. 1769; d. Cheshunt, Hertfordshire, 23 Nov. 1859. He studied the engraver's art in his boyhood and also early turned his attention to painting, in which he was a pupil of Morland, who married his sister. He was elected R.A. in 1811. His first painting was exhibited in 1790, and from that time to his death he produced numerous pictures of different types, though his best work was done in the painting of animals. His most important works are 'Bull-baiting' (1797); the 'Alderney Bull, Cow, and Calf in a Meadow' (1820–22), his masterpiece, now in the National Gallery, painted in rivalry with Paul Potter's celebrated picture; 'Allegory of Waterloo' (1817), a sketch for the British Institution which he afterward painted larger with less success; 'Gordale Scar, Yorkshire,' in the National Gallery (this great picture with its noble group of cattle which was presented by Lord Ribberdale to the British Museum with a view to its transference to the British Museum was rolled up and consigned to a cellar until 1858, though it eventually reached its destination in 1878); 'Harlech Castle,' also in the National Gallery; 'Regent's Park in 1807'; 'A Cattle Piece,' also in the National Gallery; 'Bulls Fighting in a Landscape,' a work of great merit, now in the South Kensington Museum; 'Donkey and Pigs,' also in the museum at South Kensington; 'Pigs,' and 'A Chinese Sow,' in the same collection; 'The Council of Horses,' in the Manchester Gallery, and 'De Tabley Park,' in the Oldham Gallery. Among his engravigs the most noteworthy are after Rembrandt, Hoppner, Rubens, Northcote, Morland and Reynolds. As an engraver he was not less successful than as a painter and a complete set of impressions of all his plates, in their different states, 300 in all, was presented by him to the British Museum before his death.

WARD, James, English psychologist and metaphysician: b. Hull, 27 Jan. 1843. He was educated at the Liverpool Institute, the universities of Berlin and Göttingen and at Trinity College, Cambridge. He was ordained in the Congregationalist ministry and was for a year in charge of Emmanuel Church, Cambridge, but later engaged in psychological research. He became a Fellow of Trinity College in 1875, lecturer there in 1881 and in 1897 he was called to the chair of mental philosophy at Cambridge University. He was Gifford lecturer in psychology at Aberdeen University in 1895–97 and lecturer at Saint Andrew's in 1908–10. He has accomplished notable work in both psychology and metaphysics; has received honorary degrees from the universities of Cambridge, Edinburgh and Oxford; and in 1913 was elected to the French Institute. He has contributed extensively to the *Journal of Physiology, Mind,* and *British Journal of Psychology.* He is author of 'Naturalism and Agnosticism' (1899; 4th ed., 1915); 'Heredity and Memory' (1913); 'Psychological Principles' (1918), etc.

WARD, John Henry Hobart, American soldier: b. New York, 17 June 1823; d. Monroe, N. Y., 25 July 1903. He entered the United States army in 1841, was appointed sergeant-major in 1845, served through the Mexican War, and was afterward successively assistant commissary-general and commissary-general of New York. He organized a regiment of volunteers at the outbreak of the Civil War, was appointed colonel and was engaged at the first battle of Bull Run. He later participated in the Peninsular campaign, in the second battle of Bull Run and on 4 Oct. 1862 was promoted brigadier-general of volunteers. He was subse-

quently engaged with the Army of the Potomac and was in command of a brigade at Fredericksburg, Chancellorsville, Gettysburg, the Wilderness, Spottsylvania and other important battles. He was honorably mustered out of service 21 July 1864 and from 1870 until his death was clerk of the Superior Court of New York City.

WARD, John Quincy Adams, American sculptor: b. Urbana, Ohio, 29 June 1830; d. 1 May 1910. In 1850 he entered the studio of Henry K. Browne, where he studied six years. In 1861 he opened a studio in New York, where as the fruits of his residence in the Indian country, he modeled his 'Indian Hunter.' This was followed by 'The Good Samaritan,' 'Commodore M. C. Perry,' with reliefs and 'The Freedman.' Among his best-known work in later years he produced the 'Citizen Soldier,' and statues of 'Shakespeare,' 'General Reynolds,' 'General Washington,' 'General Israel Putnam,' 'General Thomas,' 'General Daniel Morgan' and 'Lafayette.' He subsequently modeled the colossal statue of 'Washington' for the New York sub-treasury building, a colossal statue of 'President Garfield' and 'The Pilgrim.' The crowning group of 'Victory' in the arch for the Dewey reception in New York in 1899 was also his work. For three years he was vice-president and for one term president of the National Academy of Design, and was trustee of the Metropolitan Museum of Art.

WARD, Lester Frank, American geologist: b. Joliet, Ill., 18 June 1841; d. 1913. Graduated from the Columbian University in 1869, he was assistant geologist in the United States Geological Survey in 1881–88, and geologist in 1888. He made especial investigations in the field of palæobotany. Among his publications are 'Guide to the Flora of Washington and Vicinity' (1881); 'Sketch of Palæobotany' (1885); 'Types of the Laramie Flora' (1887); 'Geographical Distribution of Fossil Plants' (1888); 'Outlines of Sociology' (1898); 'Pure Sociology' (1903), and 'Psychic Factors of Civilization' (2d ed., 1906).

WARD, Lydia Avery Coonley, American writer: b. Lynchburg, Va., 31 Jan. 1845. She was married in 1867 to J. E. Coonley (d. 1882) and in 1897 to H. A. Ward, and was president of the Chicago Woman's Club 1895–96. She has published 'Under the Pines and Other Verses' (1895); 'Our Flag,' a cantata, with music by G. F. Root (1896); 'Singing Verses for Children' (1897); 'Love Songs' (1898).

WARD, Mary Augusta Arnold, English novelist: b. Hobart, Tasmania, 11 June 1851; d. London, 24 March 1920. She was a daughter of Thomas Arnold (q.v.), son of Arnold of Rugby, and in 1872 was married to Thomas Humphry Ward. Her father, having become a Roman Catholic, gave up his educational post in Tasmania and returned to England in 1856 and there his daughter was educated. The father held appointments at Dublin and Birmingham, and after 1885 resided at Oxford, where she also lived with her husband until they removed to London in 1880. Her long residence in Oxford and consequent familiarity with the intellectual atmosphere of the university no doubt gave her that inclination toward ethical discussion which so markedly influenced the character of her writing. In 1890 she was one of the principal founders of University Hall, a settlement among the poor in the Saint Pancras district of London, and since 1897 occupying a spacious building near Tavistock square, erected for that purpose by Passmore Edwards. In the work of this settlement Mrs. Ward put a vast amount of personal endeavor and thought, and its influence has been commensurate with the pains that have been taken in its behalf. Mrs. Ward's first important literary work was a translation of 'Amiel's Journal' (1885), but prior to this she had published 'Milly and Olly,' a child's story. These were followed by 'Miss Bretherton,' a story (1886), and 'Robert Elsmere' (1888), which brought her almost immediately a world-wide fame, being translated into several languages, and having an immense sale. Later works of hers are 'The History of David Grieve' (1892); 'Marcella' (1894); 'Sir George Tressaday' (1896); 'Helbeck of Bannisdale' (1898); 'Eleanor' (1900); 'Lady Rose's Daughter' (1902); 'The Marriage of William Ashe' (1905); 'Fenwick's Career' (1906); 'Unitarianism and the Future' (1894). All of Mrs. Ward's novels display much intellectual power and intensity of moral purpose, and her influence upon the social and ethical thought of England and the United States has not been inconsiderable. Her novels are of varying degrees of excellence, 'Helbeck of Bannisdale' being perhaps the most powerfully conceived since 'Robert Elsmere.' She was a founder of the Women's National Anti-Suffrage League in 1908, and took the platform in defense of their views on several occasions.

WARD, Nathaniel, English Puritan divine: b. Haverhill, Suffolk, 1578; d. Shenfield, Essex, 1652. He was educated at Emmanuel College, Cambridge, traveled widely on the Continent, took orders in 1618 and from 1620 to 1624 appears to have been chaplain to the colony of British merchants at Elbing, Prussia. On his return to England, he was curate of Saint James', Piccadilly (1626–28), and subsequently rector of Stondon Massey, Essex. On account of his Puritan views he was frequently cited before Laud, who finally (1633) deprived him of the living. He emigrated in 1634 to Massachusetts, and became minister to a settlement at Agawam, later called Ipswich. This post, because of ill-health, he resigned in 1636. In 1639 he was appointed, with the Rev. John Cotton (q.v.), to frame the first code of laws for the colony,—the 'Body of Liberties,' passed by the General Court in 1641. This compilation is in many respects a remarkable one, and displays wide knowledge of law. Ward was influential in the colonial government; in 1645 he became a member of the committee for the revision of the Massachusetts laws. But he is chiefly known as the author of the "most eccentric and amusing" work written in colonial America. This book, 'The Simple Cobbler of Agawam,' was printed at London in 1647, and passed through four editions in that year. It appeared under the pseudonym of Theodore de la Guard — Theodore being the Greek equivalent of the Hebrew Nathaniel, de la Guard the French for Ward — who turns from his humble last to satirize England old

and new. Amid some curious syntax, there is in it an abundance of eloquence and wit, making it still very readable. There is, too, much of the intolerance of the place and time. Ward went back to England in 1646. His 'Cobbler' had gained some notice, and he preached before the Commons in 1647 and received the living of Shenfield, Essex, in 1648. Among his further publications were 'A Religious Retreat Sounded to a Religious Army' (1647); 'To the High and Honorable Parliament, Humble Petitions, Serious Suggestions and Dutiful Expostulations' (1650); and probably, 'Mercurius Anitmechanicus' (1648), denouncing the execution of Charles. Consult Dean, 'Memoir of Nathaniel Ward' (1868); Tyler, 'A History of American Literature' (1878); the 'Collection of the Massachusetts Historical Society,' 3d ser., I, VIII; 4th ser., VII.

WARD, Nathaniel Bagshaw, English botanist: b. London, 1791; d. Saint Leonard's Sussex, 4 June 1868. He was apprenticed to his father, a medical man, studied at the London Hospital and attended the lectures of Thomas Wheeler at the Society of Apothecaries. He succeeded to his father's practice but devoted his leisure to collecting and cultivating plants. In 1836 he observed a seedling which had sprouted and was growing in a bottle, which suggested to him the possibility of growing plants under adverse atmospheric conditions, and resulted in his construction of the Wardian Case. The high value of the case was demonstrated by the successful conveyance of 20,000 tea plants from Shanghai to the Himalayas; and later cinchona plants were introduced into India through the same means. He collected a herbarium of 25,000 specimens; was one of the founders of the Microscopical (now the Royal Microscopical) Society, and was elected to the Royal Society in 1852. Author of 'On the Growth of Plants in Closely Glazed Cases' (1842).

WARD, Susan Hayes, American author, sister of W. H. Ward (q.v.): b. Abington, Mass., 26 Nov. 1838. She was educated at Wheaton Seminary, Mass., under Lucy Larcom (q.v.), studied art in New York, Boston, Dresden and Paris, and later studied at the Woman's Medical College in Boston. She afterward engaged in lecturing on art; was art-critic on the New York *Independent* in 1883–93, and office editor in 1892–98. Her writings include 'Christ at the Door' (1872); 'Sabrina Hackett'; 'History of the Broadway Tabernacle' (1901); 'George Hepworth,' a biography (1903), etc.

WARD, Thomas Humphry, English author and journalist: b. Hull, 9 Nov. 1845. He was educated at Oxford, and was married to Mary Augusta Arnold, since widely known as Mrs. Humphry Ward, in 1872. He edited 'Ward's English Poets' (1881–82); 'English Art in the Public Galleries of London' (1888); 'The Reign of Queen Victoria' (1887); 'Men of the Reign' (1885); 'Men of the Time,' 12th ed.

WARD, Wilfrid Philip, English author, son of W. G. Ward (q.v.): b. Ware, Hertfordshire, 2 Jan. 1856; d. 9 April 1916. He was educated at Ushaw College, Durham, and the Gregorian University at Rome, and was lecturer at the former in 1890. He has been a member of the Council of the Catholic Union of Great Britain since 1886, and has published 'The Wish to Believe' (1884); 'The Clothes of Religion' (1886); 'William George Ward and the Oxford Movement' (1889); 'William George Ward and the Catholic Revival' (1893); 'Witnesses to the Unseen' (1894); 'Life and Times of Cardinal Wiseman' (1897); 'Life of Cardinal Newman' (1908); 'Man and Matters' (1914).

WARD, William, English Baptist missionary: b. Derby, 20 Oct. 1769; d. Serampore, India, 7 March 1823. He was a printer who was licensed as a preacher and going to India in 1799 settled at Serampore. Besides printing various religious works in the Bengali language, he wrote 'An account of the Writings, Religion and Manners of the Hindoos including Translation from their Principal Works' (1811, 5th ed., 1863), which was long the principal authority upon Indian affairs.

WARD, William George, English Tractarian leader and Roman Catholic theologian: b. London, 21 March 1812; d. Hampstead, London, 6 July 1882. Educated at Winchester College, he entered Christ Church, Oxford, in 1830, obtained a scholarship at Lincoln College in 1833, was graduated in 1834 and about the same time secured election to a Fellowship at Balliol. He then took orders, and was a lecturer in mathematics and logic. He soon became a powerful influence in Oxford life, especially on its religious side, among those more or less affected by him being Archbishop Tait, Benjamin Jowett, Dean Stanley and the poet Clough. He in turn was profoundly influenced by John Henry Newman, whose famous 'Tract 90' he defended in two pamphlets. The publication, in 1843, of William Palmer's 'Narrative of Events connected with the Publication of Tracts for the Times' produced from Ward in reply his famous work 'The Ideal of a Christian Church considered in comparison with existing Practice' (1844), and the formal condemnation of this book by the university authorities precipitated Ward's reception into the Roman Catholic Church (1845), where he was soon followed by Newman and other Tractarians. In 1851 he became lecturer in moral philosophy in Saint Edmund's College Ware, and in 1854 the Pope gave him the diploma of Ph.D. He resigned his lectureship in 1858, and in the *Dublin Review,* which he edited 1863–78, contended vigorously on behalf of ultramontane principles. He was founder and leading member of the Metaphysical Society (1869), which included such opposites as Huxley and Martineau. In addition to the works already mentioned Ward wrote 'On Nature and Grace' (1860); 'Essays on the Philosophy of Theism' (1884), a work of great ability; and many smaller works. Consult 'William George Ward and the Oxford Movement' (1889), and 'W. G. Ward and the Catholic Revival' (1893), both by his son Wilfrid. See OXFORD MOVEMENT.

WARD, William Hayes, American Congregational clergyman and Orientalist: b. Abington, Mass., 25 June 1835; d. 28 Aug. 1916. He was graduated from Amherst in 1856, from the Theological Seminary there in 1859 and was ordained to the ministry in the last-named year. He engaged in pastoral work and in teaching and in 1860–68 he was pastor of the Congre-

gational Church and professor of Latin at Ripon College. He joined the editorial staff of the New York *Independent* in 1868 and was chief editor from 1896 until a few years before his death. He was in charge of the Wolfe exploring expedition to Babylonia in 1884, concerning which he published a 'Report' (1885); and has also written 'World's Christmas Hymn' with his sister, S. H. Ward (1883); 'Biography of Sidney Lanier' (1885), etc.

WARDE, wârd, **Frederick,** American actor: b. Wardington, Oxfordshire, England, 23 Feb. 1851. He made his first stage appearance in 1867, acted in English cities until 1874, then came to the United States and for three years was leading man at Booth's Theatre, New York. He afterward supported Edwin Booth and John McCullough and since 1881 has starred as a tragedian, also lecturing often on Shakespearean and other subjects. He published 'The Fools of Shakespeare' (1913).

WARDEN, David Baillie, American scholar: b. Ireland, 1788; d. Paris, France, 8 Oct. 1845. He came to the United States when young, received a classical education, was graduated from the New York Medical College and in 1804 he was appointed secretary of the United States legation at Paris. He subsequently became consul and continued in that office until his death. His 'Statistical, Political and Historical Account of the United States of North America' (3 vols., 1819) was later published in both French and German and his other writings include 'Inquiry Concerning the Intellectual and Moral Faculties and Literature of the Negroes' (1810); 'Recherches sur les antiquités de l'Amerique septentrionale' (1827); 'L'Art de vérifier les dates, chronologie historique de l'Amérique' (10 vols., 1826–44); 'Bibliotheca Americana' (1831), etc.

WARDEN, Florence. See JAMES, FLORENCE.

WARDEN, the title in the United States of certain public officers, such as game-wardens, who enforce the game laws, port-wardens, who are harbor officers, and the wardens of prisons.

In the Protestant Episcopal Church the church-wardens are two parochial officers, chosen annually at the Easter vestries, one by the minister and one by the parishioners. Their duties are to protect the church-building and its appurtenances, to superintend the ceremonies of divine worship and generally to act as the legal representatives of the parish.

In England the heads of All Souls, Keble, Merton, Wadham and New colleges at Oxford are known as wardens. The Lord Warden of the Cinque Ports is an official with merely nominal duties now, though he was formerly of much importance. Lord Wardens of the Marches were formerly appointed to keep the disturbed border counties of England in a state of defense against the Scotch.

WARDHA, wŭr'dä, or **WURDHA,** India, (1) the chief town of the district of the same name, Central Provinces, on the left bank of the Wardha River, 40 miles southwest of Nagpur and 471 east of Bombay. It was founded in 1866; as a junction station on the railway it has become a centre of the cotton trade. Pop. about 10,000. (2) The district, which was formed out of Nagpur in 1862, has an area of 2,401 square miles and about 300,000 population. The staple crops are millet, cotton, wheat and rice. Here is produced the well-known Hinganghat cotton, which is exported to the amount of 25,000 bales a year. The breed of cattle is good, especially the trotting bullocks. A railway crosses the centre of the district. (3) The Wardha River rises in the Satpura hills and flows southeast for 254 miles to join the Weingunga; the united stream, under the name of the Pranhita, ultimately falls into the Godavery at Sironcha.

WARDLAW, Elizabeth, LADY, Scottish poet: b. 1677; d. 1727. She was the daughter of Sir Charles Halkett of Pitfirrane and in 1696 married Sir Henry Wardlaw of Pitreavie, near Dunfermline. Her ballad, 'Hardyknute, a Fragment,' was first published in 1719 as an antique and after enlargement from 216 to 336 lines, had been several times reprinted, when Percy in the second edition of his 'Reliques' revealed its authorship. To Lady Wardlaw has also been ascribed 'Sir Patrick Spens,' 'The Douglas Tragedy' and many more traditonal Scotch ballads. This is highly improbable. "Hardyknute," says Sir Walter Scott, "was the first poem I ever learnt, the last I shall ever forget."

WARDLAW, Ralph, Scottish Congregational clergyman: b. Dalkeith, 22 Dec. 1779; d. near Glasgow, 17 Dec. 1853. He at first studied divinity with the view of becoming a minister of the Associate Secession Church, but having been led to change his views on the subject of ecclestiastical polity, he was settled in charge of a congregation in Glasgow, where he continued to officiate to the close of his life. In 1811 he was appointed professor of systematic theology in the Congregational seminary in Glasgow. Both as a lecturer and as a preacher his abilities were of the first order. Of his numerous publications may be cited 'Discourses on the Socinian Controversy' (1814); 'Essays on Assurance of Faith and Extent of the Atonement and Universal Pardon' (1830); 'Christian Ethics' (1832); 'National Church Establishments Examined' (1839); 'Lectures on Female Prostitution' (1842); 'Congregational Independency' (1847).

WARD'S ISLAND, an island in the East River, lying northeast of the borough of Manhattan, New York City, and forming the western boundary of Hell Gate. It is roughly rectangular in shape and includes about 200 acres. It is the property of the city of New York and contains a State insane asylum, a home for invalid soldiers, a home for children and the State Emigrant Hospital.

WARE, wâr, **Henry,** American Unitarian divine: b. Sherburne, Mass., 1 April 1764; d. Cambridge, Mass., 12 July 1845. He was graduated at Harvard in 1785, for two years studied theology, and in 1787 became pastor of the First Church at Hingham, Mass., where he remained until 1805 and then accepted the Hollis professorship of divinity at Harvard. At this time Unitarian views were beginning to cause dissension in the New England churches, and the appointment of Ware, a leader of Unitarian thought, to this position in the college brought on a memorable controversy, in which he took a prominent part, particularly in his 'Letters Addressed to Trinitarians and Calvinists' (1820), in answer to the 'Letters to

Unitarians' by Leonard Woods, a professor at the Andover Theological Seminary. Ware also published 'An Answer to Dr. Woods' Reply' (1822); 'A Postscript to an Answer,' etc. (1823); 'Foundation, Evidences, and Truth of Religion' (1842), and other writings. He resigned his professorship in 1840, but was at the head of the Harvard Divinity School from its establishment in 1826 until his death.

WARE, Henry, Jr., American Unitarian divine and author, son of Henry Ware (q.v.): b. at Hingham, Mass., 21 April 1794; d. Framingham, Mass., 22 Sept. 1843. He was graduated at Harvard in 1812; was instructor at Phillips Exeter Academy, 1812–14; studied theology at Harvard under his father and in 1817 became minister of the Second Church, Boston. From 1830 to 1842 he was professor of pulpit eloquence and pastoral care in the Harvard Divinity School, and in 1819–22 was one of the editors of the *Christian Disciple,* afterward the *Christian Examiner,* an organ of Unitarian thought. He took an active part in the organization of the Unitarian movement. Among his writings are 'Hints on Extemporaneous Preaching' (1824); 'On the Formation of the Christian Character' (1831); 'Life of the Saviour' (1832); 'Scenes and Characters Illustrating Christian Truth' (1837); various memoirs, and compositions in verse.

WARE, William, American Unitarian clergyman and author: b. Hingham, Mass., 3 Aug. 1797; d. Cambridge, Mass., 19 Feb. 1852. He was graduated at Harvard in 1816, studied theology under his father, Henry Ware (q.v.) at Cambridge, held pastorates at Northboro, Mass., Brooklyn, Conn., and Burlington, Vt., and from 1821 to 1836 was minister of the First Unitarian Church, New York. He afterward preached for short periods at several other places, all near Boston, was proprietor and editor of the *Christian Examiner* (1839–44), and published 'Letters from Palmyra' (1837), first published in the *Knickerbocker Magazine,* subsequently republished as 'Zenobia, or the Fall of Palmyra' (new ed., 1868); 'Probus, or Rome in the 3d Century' (1838), republished as 'Aurelian' (new ed., 1868); 'Julian, or Scenes in Judea' (1841); 'Sketches of European Capitals' (1851); 'Lectures on the Works and Genius of Washington Allston' (1852), and a 'Life of Nathaniel Bacon,' in Sparks' series. He edited 'American Unitarian Biography' (1850).

WARE, William Robert, American architect, son of Henry Ware, Jr. (q.v.): b. Cambridge, Mass., 27 May 1832; d. Milton, Mass., 9 June 1915. He was graduated at Harvard (1852) and at the Lawrence Scientific School (1856). He practised architecture at Boston (1860–81). In 1865 he was appointed professor of architecture in the Massachusetts Institute of Technology and filled the same chair in Columbia University from 1881–1903, when he retired with title of professor emeritus. Among his writings are 'Modern Perspective'; 'The American Vignola'; 'Shades and Shadows.'

WARE, Mass., town in Hampshire County, on the Ware River and on the Boston and Maine and the Boston and Albany railroads, nearly in the centre of the State, about 25 miles northeast of Springfield and about the same distance west of Worcester. It was settled in 1673 by Jabez Olmstead, and on 25 Nov. 1761 was incorporated as a precinct and in 1775 was made a town. The town has a general elevation of about 550 feet above sea-level. The waterworks are owned and operated by the town. The chief manufacturing establishments are cotton, woolen and hosiery factories, shoe factories, paper manufactures and machine shops. There are more than 100 factories in the town with nearly 3,500 employees. The surrounding farms and the nearby manufacturing villages contribute to Ware's industrial prosperity. There are seven churches, a public high school, established in 1850, public and parish graded schools and a public library which contains about 15,000 volumes. There is one national and one savings bank, the latter unusually prosperous for a town of the size. The government is administered by means of town meetings, at which, by popular vote, the town officers are elected. Nearly one-third the population are of foreign birth, chiefly French Canadians and Poles. Pop. 9,346. Consult Gay, 'Gazetteer of Hampshire County.'

WAREHAM, wār'ăm, Mass., town in Plymouth County, on Buzzard's Bay, and on the New York, New Haven and Hartford Railroad, about 50 miles southeast of Boston and 15 miles northeast of New Bedford. It has steamer connections with many of the coast cities and towns. The town contains the villages of Wareham, East Wareham, West Wareham, South Wareham and Onset. The chief industries are iron manufacturing and the cultivation of cranberries. The town has five churches, one high school, elementary schools, public and private, and a public library. There are two banks and two newspapers. Pop. 5,176.

WAREHOUSE ACT, an act of Congress which became a law 11 Aug. 1916, its purpose being "to establish a form of warehouse receipt for cotton, grain, wool, tobacco and flaxseed, which will make these receipts easily and widely negotiable as delivery orders or as collateral for loans, and, therefore, of definite assistance in financing crops. This purpose the act aims to attain by licensing and bonding warehouses under conditions which will insure the integrity of their receipts and make these receipts reliable evidence of the condition, quality, quantity and ownership of the products named which may be stored with them." The general authority of supervision and investigation and classification of warehouses and their methods is vested in the Secretary of Agriculture. Licenses may then be granted to warehousemen who fulfil the proper conditions mentioned in the license and who supply sufficient bond and sureties for their responsibility. Licenses may also be granted to persons not warehousemen to accept custody of and store agricultural products in warehouses owned by the State, provided they fulfill certain specified conditions. A nominal fee is charged for such license and for its renewal. Consult 'United States Compiled Statutes' (chap. E, sec. 8747¼, 1916).

WAREHOUSEMAN, *in law,* one who receives goods of any kind for the mere purpose of storage. He is a bailee, and, his contract with the owner being one for their mutual

benefit, is held only to ordinary care and diligence, and if loss or injury happen to the goods, he is not responsible without the absence of this care or diligence on his part, unless he expressly assumes a greater responsibility. There is nothing, however, to prevent warehousemen receiving goods on whatever terms or contract they see fit to make with the owner. Persons may become warehousemen and subject only to the law of that relation, whose general position is quite different. Forwarding merchants in the United States are generally regarded as warehousemen, unless they take upon themselves the duty and the responsibility of common carriers, which they do when they begin to act in that character. On the other hand, common carriers, as railroad companies or expressmen, lie only under the less responsibility of warehousemen when they cease to be carriers of the goods they have transported, or have not yet begun to carry those they have taken for future transport. It is sometimes difficult to draw the line in particular cases and say whether a person or company is liable without fault because the goods were then in his or its possession as carrier, or liable only for fault because the transit had not begun, or had terminated. The general principle is quite certain, although the authorities are far from uniform in their application of it. If the carrier receives them to carry at once or as soon as he can, he holds them as carrier; if he is to keep them until a distant period of transit, until then he is only a warehouseman. If the actual transit has ceased, some courts hold that his liability ceases at once, and it undoubtedly does so when, after he is ready to deliver them, they are left on his hands and he awaits the call of the owner or consignee. A warehouseman has a lien on goods in his care for the storage of them. He may deliver a part and retain his lien on the residue for all his charge for all the goods, if all were delivered to him as one bailment. But he has no general lien on any goods for all demands against the owner, or for the storage of other goods. During recent years the larger cities of the United States have increased the stringency of storage warehouse regulations, which vary with localities.

WAREHOUSING SYSTEM, the system by which goods liable to excise or customs duty are kept in warehouses without the duty being paid on them till they pass to the consumer or the retail dealer. Goods liable to duty are warehoused in a bonded warehouse, and are called goods in bond. The ports at which particular kinds of goods may be warehoused are determined; but the system has been gradually relaxed so as to admit of every important port being used for warehousing and even important inland towns are admitted as warehousing centres. The warehouse is kept by a bonded storekeeper, who gives a bond of sufficient value and with satisfactory security to the government for the performance of his duties. When goods are warehoused by an importer in a bonded store they may be transferred by an order, addressed by the importer to the storekeeper, to any other persons, the new owner assuming the responsibilities of the importer. Goods in a bonded store are always open to the inspection of the officers of customs and can only be inspected by the owner in the presence of the proper officer. Any importer who fraudulently gains access to goods stored by him without the presence of the proper officer is liable to a fine. Goods must be stored and remain in store in their original packages, unless when permission is given before or after storing to sort or repack them. Any infringement of this regulation or of the regulations for storing or removing goods subjects to heavy penalties, commonly to the forfeiture of the goods. Goods under bond may on application be removed at the expense of the owner as often as required from one warehouse to another, or by coast or inland carriage, from one port to another, being stored on the same terms in the new port or warehouse as in the old. The warehouse-keeper is bound to store the goods so that easy access can be had to each package. The keeper of the warehouse is liable for the duty on any goods taken out of the warehouse without proper authority; but if goods are improperly removed by a customs-officer no duty is exigible. Goods which have been in warehouse for five years must be rewarehoused or they are liable to be sold.

WARFARE, Submarine. See SUBMARINE WARFARE.

WARFIELD, Benjamin Breckinridge, American educator: b. Lexington, Ky., 5 Nov. 1851. He was graduated from Princeton in 1871, from the Princeton Theological Seminary in 1876 and studied at the University of Leipzig in 1877. The next year he became instructor in New Testament literature and exegesis at the Western Theological Seminary, Allegheny, Pa. He was appointed professor of those branches in 1879, and in 1887 he resigned to accept the chair of didactic and polemical theology at Princeton, which he still occupies. He has twice for short periods served as president of Princeton Theological Seminary (1902–03 and 1913–14). He was for a time coeditor of the *Presbyterian Review* (1890–1902), and he has written 'The Divine Origin of the Bible' (1882); 'Introduction to the Textual Criticism of the New Testament' (1886 and 11 subsequent editions); 'Augustine's Anti-Pelagian Treatises' (1887); 'The Right of Systematic Theology' (1897); 'Two Studies in the History of Doctrine' (1897); 'The Significance of the Westminster Standards as a Creed' (1897); 'Acts and Pastoral Epistles' (1902); 'The Power of God Unto Salvation' (1903); 'The Lady Story' (1907); 'The Saviour of the World' (1913); 'The Plan of Salvation' (1915). He has contributed frequently to the *Quarterly Review,* and has written many articles for the leading encyclopedias and dictionaries of the Bible.

WARFIELD, David, American actor: b. San Francisco, Cal., 1866. He first appeared on the stage in 1888 in 'The Ticket-of-Leave Man,' and from 1890 he was seen in New York at the Casino and at Weber and Field's Music Hall. He came under the management of David Belasco in 1901 and from that time starred in a series of phenomenal successes. 'The Auctioneer,' in which he starred, was staged in 1901 and had a run of 1,400 performances. This was followed in 1904 by 'The Music Master,' which ran for more than 1,000 performances and was repeatedly successfully re-

vived. He played in 'The Grand Army Man' in 1907; in 'The Return of Peter Grimm' in 1911, and in 'Van der Decken,' written for him by Belasco, in 1916. 'The Music Master' was again revived in 1917–18 and 'The Auctioneer' in 1918–19. Under Belasco's management he has appeared only in rôles portraying a lovable old gentleman, and his mastery of the art of making the rôle by turns pathetic, amusing and always appealing has placed him in the foremost ranks of American actors.

WARFIELD, Ethelbert Dudley, American college president, brother of B. B. Warfield (q.v.): b. Lexington, Ky., 16 March 1861. He was graduated from Princeton in 1882 and from the Columbia Law School in 1885. In 1886–88 he was engaged in law practice at Lexington, but in 1888 accepted the chair of history and the presidency of Miami University, Oxford, Ohio, resigning in 1891 to accept a like position at Lafayette College, Easton, Pa. He was ordained to the Presbyterian ministry in 1899 and has published 'The Kentucky Resolutions of 1798' (1887); 'At the Evening Hour' (1898); 'Memoir of Joseph Cabell Breckenridge, U. S. N.' (1898), etc.

WARHAM, wâr'ăm, William, English prelate, archbishop of Canterbury: b. Hampshire, about 1450; d. 22 Aug. 1532. He was educated at New College, Oxford, of which he became a Fellow in 1475. He acted for a time as advocate in the Court of Arches and moderator of the Civil Law School at Oxford, and in 1493 was ordained subdeacon. He was granted the living of Barley, Herts, in 1495, and that of Cottenham, near Cambridge, in 1500, and held both till 1502 when he was consecrated bishop of London. He was formally installed as archbishop of Canterbury in 1504 and about the same time he was appointed lord-chancellor after 17 months' service as keeper of the great seal. From 1506 until his death he was chancellor of Oxford University. He performed the ceremony of coronation in 1509, after the accession of Henry VIII, and in 1515 was succeeded by Wolsey in the lord-chancellorship. When Wolsey had been raised to the dignity of papal legate there was much friction between him and Warham in their official capacities. Warham's action in regard to the divorce question was weak and subservient, but shortly before his death he made a protest against the acts of the Parliament undermining the papal authority. In his earlier years he was much employed on foreign embassies. Consult Campbell, 'Lives of the Lord-Chancellors' (1845–46); Hook, 'Lives of the Archbishops of Canterbury,' new series, Vol. I (1868).

WARING, wâr'ĭng, George Edwin, American sanitary engineer: b. Poundridge, N. Y., 4 July 1833; d. New York, 29 Oct. 1898. He was a pupil in agriculture of James J. Mapes, in 1853–55 lectured in Vermont and Maine on improved farming methods and in 1855 was made by Horace Greeley manager of the latter's well-known experimental farm at Chappaqua, N. Y. In 1857–61 he was agricultural and drainage engineer of Central Park, New York, whose drainage system he planned. Having entered the Federal army in 1861 as major of the 39th New York Volunteers (Garibaldi Hussars), he fought at the first Bull Run, was transferred to the Department of the Southwest, recruited a battalion of cavalry (Frémont Hussars) at Saint Louis, and when these were consolidated with other troops to form the Fourth Missouri Cavalry, he was made colonel of that regiment. He served as such until mustered out of the service in 1865. In 1867–77 he was manager of the Ogden Farm, Newport, R. I., writing during that time the 'Ogden Farm Papers' for the *American Agriculturist.* At the time of the yellow-fever epidemic in Memphis, Tenn., in 1878, he was appointed to alter the drainage system there; and subsequently he devoted himself to sanitary engineering. In 1882 he was appointed a member of the National Board of Health, with which he remained connected for several years; and in 1894 he became assistant engineer of New Orleans. From 1895 to 1898 he was street-cleaning commissioner of New York; during his administration he thoroughly reorganized his department and brought it to a high state of efficiency. In 1898 he was selected to be head of a commission for the improvement of sanitary conditions in Havana, Cuba, with the purpose of eradicating yellow fever. He prepared a detailed report of great value, but died of the fever not long after his return to the United States. He was a member of the Institution of Civil Engineers, Great Britain; Fellow of the Sanitary Institute of Great Britain; honorary member of the Royal Institute of Engineers, Holland, and corresponding member of the American Institute of Architects. Among his published works are 'The Elements of Agriculture' (1854); 'Whip and Spur' (1875); 'A Farmer's Vacation' (1876); 'Village Improvements and Farm Villages' (1877); 'Sewerage and Land Drainage' (1889) and 'Modern Methods of Sewage Disposal' (1894).

WARK, David, Canadian legislator: b. near Londonderry, Ireland, 19 Feb. 1804; d. Fredericton, New Brunswick, 20 Aug. 1905. In 1825 he emigrated to New Brunswick, there took up shipbuilding, bookkeeping and teaching until 1836, turned to mercantile life at Richibucto, later adding to his interests milling and the lumber-trade. He held office as a county magistrate and judge of the Court of Common Pleas, in 1842 was elected from the county (Kent) to the provincial legislature and in 1846 re-elected. From 1851 to 1867 he was a representative of the county in the legislative council, being in 1858–62 in the executive council, and for a time holding the post of receiver-general. In 1867 he was one of the original senators appointed to the Senate of Canada under the British North America Act. Throughout his political career he was identified with the Liberal party. In the development of agriculture, the extension of trade and the promotion of education, he was prominently concerned. He undertook in 1847 the furtherance of legislation favoring reciprocal trade between the provinces, and such legislation eventualy proved of influence in connection with the reciprocity treaty of 1854 between Canada and the United States. The perfected system of the New Brunswick savings bank was largely due to his initiative; and he was chiefly instrumental in bringing about the movement which in 1847 resulted in the constitution of the pro-

vincial board of education of New Brunswick, with the attendant changes, and in the reorganization of King's College as the University of New Brunswick (1859). His centenary was formally observed in 1904 by the presentation of addresses, it being claimed for him that he was the world's oldest legislator; and on 28 April a portrait of him by W. Forbes, A.R.C.A., was unveiled in the Senate. Consult an article by Crockett in the *Westminster Magazine* (Toronto), June 1903.

WARKAMOOWEE, in Ceylon, a catamaran type of canoe, carrying a sail with outriggers. It is generally manned by lascars, who sit grouped together for hours at the end of the lever that balances the sail, adding or taking away a man according to the strength of the wind. These canoes often sail 10 miles an hour.

WARM-BLOODED ANIMALS, mammals and birds, in contradistinction to fishes, amphibians and reptiles and to all invertebrate animals with slow circulation. See ANIMAL HEAT.

WARMAN, Cy G., American journalist: b. Greenup, Ill., 22 June 1855; d. Chicago, Ill., 7 April 1914. He engaged as a farmer and wheat broker in Illinois until 1880 when he removed to Colorado. He became editor of the *Western Railway,* Denver, Colo., in 1888; of the Creede, Colo., *Chronicle* in 1892; and in 1892 was introduced to the public as the "Poet of the Rockies" by the New York *Sun.* He went to New York in 1893 and has since been engaged in literary work. He wrote the words of the popular song 'Sweet Marie' and has published 'Tales of an Engineer' (1895); 'Snow on the Headlight' (1899); 'Short Rails' (1900); 'Songs of Cy Warman' (1911), etc.

WARMING AND VENTILATION. See HEATING AND VENTILATION.

WARMOUTH, Henry Clay, American politician and soldier: b. McLeansboro, Ill., 9 May 1842. He was admitted to the bar in 1861 and became district attorney of the 18th judicial district of Missouri in 1862, but resigned to enter the Union army. He was appointed lieutenant-colonel, was engaged in the assaults on Vicksburg of 19–22 May 1862 and was present at the battles of Lookout Mountain and Missionary Ridge. He served in the Texan campaign and was afterward judge of the military court of the Department of the Gulf until the close of the war. He became military governor of Louisiana in 1868 and was inaugurated civil governor upon the adoption of its new constitution, an office he occupied until 1873. He was a member of the Louisiana legislature in 1876–77 and collector of customs at New Orleans in 1889–93. He was one of the builders of the New Orleans, Fort Jackson and Grand Isle Railroad, of which he was long president.

WARNER, wâr'nẽr, **Anna Bartlett** ("AMY LOTHROP"), American novelist, sister of Susan Warner (q.v.): b. New York, 1820; d. 1915. She collaborated with her sister in writing the novels 'Say and Seal' (1860); 'Wych Hazel' (1876) and 'The Gold of Chickaree' (1876). Her own publications include 'Dollars and Cents' (2 vols., 1853); 'My Brother's Keeper' (1855); 'Stories of Vinegar Hill' (1871); 'The Fourth Watch' (1874); 'The Light of the Morning' (1882); 'Cross Corners' (1887); 'West Point Colors' (1903), etc.

WARNER, Anne (ANNE WARNER FRENCH), American novelist: b. Saint Paul, Minn., 1869; d. 1913. In 1888 she became the wife of Charles Ellis French. She wrote a number of books of travel and fiction in popular style. They include 'A Woman's Will' (1904); 'The Rejuvenation of Aunt Mary' (1905); 'Seeing France with Uncle John' (1906); 'Seeing England with Uncle John' (1908); 'The Panther' (1908); 'Your Child and Mine' (1909); 'Just between Themselves' (1910); 'When Woman Proposes' (1911); 'The Gay and Festive Claverhouse' (1914); 'Taming of Amorette' (1915).

WARNER, Charles Dudley, American editor and author: b. Plainfield, Hampshire County, Mass., 12 Sept. 1829; d. Hartford, Conn., 20 Oct. 1900. He graduated from Hamilton College in 1851 and from the law school of the University of Pennsylvania in 1856; he was admitted to the bar in the latter year at Philadelphia and practised his profession at Chicago in 1856–60. In 1860 he became assistant editor of the Hartford (Conn.) *Evening Press* and in 1861 its editor-in-chief. This newspaper was consolidated in 1867 with the *Courant,* a morning journal, and Warner was a part owner and long assistant editor of the latter, though eventually his connection with the paper was largely that of a literary contributor. Some letters of travel in America and Europe in 1868–69, printed in the *Courant,* were widely copied and his articles published in book form in 1870 as 'My Summer in a Garden,' placed him high in the list of American humorists. From 1884 to 1891 he was in charge of the "Editor's Drawer" department of *Harper's Magazine* and in 1892 was transferred to that of the "Editor's Study" in the same magazine. He was particularly successful in the essay, in which he combined shrewd observation and cultured humor in a manner in many ways resembling that of Washington Irving. He was a discerning critic as well; and in addition to his literary activities was identified with various philanthropic work. His further publications include 'A Book of Eloquence' (1853); 'Saunterings' (1872); 'Backlog Studies' (1872); 'The Gilded Age' (with S. L. Clemens, 1873); 'Baddeck and That Sort of Thing' (1874); 'Mummies and Moslems' (1876 — reissued as 'My Winter on the Nile'); 'In the Levant' (1877); 'Being a Boy' (1877); 'In the Wilderness' (1878); 'The American Newspaper' (1879); 'Studies of Irving' (with W. C. Bryant and George P. Putnam, 1880); 'Life of Washington Irving' (1881); 'Captain John Smith, Sometime Governor of Virginia and Admiral of New England' (1881); 'A Roundabout Journey' (1883); 'Papers on Penology' (with others, 1886); 'Their Pilgrimage' (1886); 'On Horseback: a Tour in Virginia, Etc.' (1888); 'Studies in the South and West, with Comments on Canada' (1889); 'A Little Journey in the World: a Novel' (1889); 'Looking Forward: The Dual Government Realized' (1890); 'Our Italy, Southern California' (1890); 'As We Were Saying' (1891); 'Washington Irving' (1892); 'As We Go' (1893); 'The Golden

House: a Novel' (1894); 'The Relation of Literature to Life' (1896); 'The People for Whom Shakespeare Wrote' (1897). He also edited the 'American Men of Letters' series and 'A Library of the World's Best Literature' (1896–98).

WARNER, Everett Longley, American artist: b. Vinton, Iowa, 16 July 1877. He studied at the Art Students' League, New York, and at the Julien Academy, Paris, afterward settling in New York, which city has furnished subjects for many of his paintings. He has specialized in landscapes and in etchings and his work is well represented in American art galleries. He engaged in painting ship camouflage in 1917 and originated one of the five designs accepted by the War Risk Bureau. He received medals at the Philadelphia Academy of Fine Arts in 1908; at Buenos Aires in 1910; the First Hallgarten Prize from the National Academy of Design in 1912; and a medal at the San Francisco Exposition in 1915. Among his paintings are 'Broadway on a Rainy Evening' (Corcoran Art Gallery, Washington); 'Quebec' (Pennsylvania Academy of Fine Art, Philadelphia); 'Along the River Front, New York' (Toledo Art Museum); 'A Mountain Village Tyrol' (Saint Louis Museum). Author and illustrator of 'The Clan of Mumes' (1916).

WARNER, Olin Levi, American sculptor: b. Suffied, Conn., 9 April 1844; d. New York, 14 Aug. 1896. He studied in the Ecole des Beaux Arts in Paris and subsequently entered Carpeaux's studio. In 1872 he opened a studio in New York, where his work came under the eye of several critics whose commendation secured his success. In 1877–78 he modeled 'Twilight,' which established his reputation. Among other well-known works of his may be mentioned 'The Dancing Nymph'; 'Cupid and Psyche'; reliefs of Joseph and other Indian chiefs; statues of Governor Buckingham of Connecticut, William Lloyd Garrison, General Devens, etc.

WARNER, Seth, American soldier: b. Roxbury, Conn., 17 May 1743; d. there, 26 Dec. 1784. Having removed in 1763 to Bennington, he was prominent in the dispute between New York and the "New Hampshire Grants" (afterward Vermont), and was outlawed (1771) with Ethan Allen (q.v.) and others. He took part in the capture of Ticonderoga and 12 May 1775 effected the surrender of Crown Point with its garrison and 113 cannon. On 16 Sept. 1775 he was made by Montgomery, in whose Canadian expedition he participated, colonel of a regiment of Green Mountain rangers, though the provincial congress of New York withheld his commission. On 5 July 1776 he was commissioned by Congress the colonel of a regiment formed in pursuance of a resolution passed on that day; and on 7 July 1777 was defeated by Fraser at the battle of Hubbardton (q.v.). At the battle of Bennington, 16 Aug. 1777, he arrived with his regiment in time to meet the enemy's reinforcement and secure a victory. In 1782 he withdrew from the service. Consult Chipman, 'The Life of Col. Seth Warner, with an Account of the Controversy between New York and Vermont from 1763 to 1775' (1858); and 'Green Mountain Boys.'

WARNER, Susan, American author: b. New York, 11 July 1819; d. Highland Falls, Orange County, N. Y., 17 March 1885. For a number of years she resided on Constitution Island in the Hudson River, opposite West Point. Her first essay in literature was a novel entitled 'The Wide, Wide World,' published in 1850 under the pseudonym of Elizabeth Wetherell. This book was in its day next to 'Uncle Tom's Cabin' the most successful work of fiction in America in point of sales and was popular also in Europe. In cheaper editions it still finds readers. It was mediocre in style and unduly pietistic in its manner; and, says Richardson, "all literature cannot show so lachrymose a book." It was succeeded by 'Queechy' (1852), which had also a large circulation and 'The Hills of the Shatemuc' (1856), containing many glimpses of American scenery. She was also the author of 'The Law and the Testimony' (1853), in which the texts proving the great doctrines of Christianity are brought together under their appropriate heads; 'The Old Helmet' (1863); 'Melbourne House' (1864), and other works.

WARNING COLORATION, in zoology. See COLORATION, PROTECTIVE.

WARP. See WEAVING.

WARPING, in agriculture, a mode of fertilizing poor or barren land by means of artificial inundation from rivers which hold large quantities of earthy matter, or warp, in suspension. The operation, which consists in enclosing a body or sheet of water till the warp has deposited, can only be carried out on flat low-lying tracts which may be readily submerged.

WARRANT, a writ issued by a competent official authorizing some minor official, as a marshal or policeman, to make an arrest, seizure or the like. The power of issuing a warrant is conferred upon justices of the peace, judges of certain courts and sometimes corporation officers who are clothed with powers of justice of the peace. A warrant for arrest is addressed to a sheriff, constable or other officer, commanding him to arrest the body of the person named and bring him before the magistrate or court to answer or be examined regarding some offense which he is charged with having committed; it is not issued without probable cause, and is secured on the complaint of a person who thinks that a public offense has been committed and who appears before the justice and requests that a warrant be issued. A warrant must give the name of the accused or sufficient data to establish his identity. It must state the offense in respect to which the magistrate has authority to issue the warrant. A return must be made by the officer of his doing under it, but as there is no set time for a return, a warrant remains in force until it is executed or canceled. There are various other forms of warrants, such as a search warrant of commitment, death warrant, extradition warrant, dividend or interest warrant, land warrants, landlord's warrant, tax warrant, warrant in bankruptcy and municipal warrants.

WARRANT OFFICER, a rank in the navy, divided into three classes — gunners,

boatswains and carpenters, the gunners taking precedence of the other two. Formerly, before ironclads superseded wooden ships, there was only one officer of this rank of each class, even on the largest ships. Now, in addition to the officer of each class appointed to carry out the special duties of gunner, boatswain and carpenter on board every ship, there are usually three or four junior gunners or boatswains appointed to battleships and some of the larger of other classes of ships to perform what are called quarter-deck duties, in addition to which in many of the larger ships an extra gunner or boatswain is appointed for torpedo duties. See UNITED STATES — NAVY.

WARRANTY, a guarantee, promise or covenant, or an undertaking on the part of one person to answer for the statements made of the thing warranted to be as represented, and to indemnify against loss, in case of failure. There are two general classes, express and implied. An express warranty is one made expressly in given terms, such as, in insurance, to indicate that an undertaking on the part of the insured that certain alleged facts are as he represents them to be; in real estate, that the grantor has a legal title to the lands conveyed; in sales, that the seller assures the quality, or the title to the property sold. A warranty in a sale of personal property is a statement made at the time of and as part of, the sale, that the goods or articles sold are as represented. A warranty is implied when the law derives it by implication or inference from the nature of the transaction. No particular form of words is necessary to create a warranty. It is the subject matter of a statement and the circumstances under which it is made that are considered rather than the form. A warranty is not valid unless supported by a consideration. In case of a breach of warranty the vendee may sue for the purchase price or may claim damages, and is not bound to return the goods. Proof of a warranty in a written contract must be shown in writing. Oral warranty cannot be admitted as evidence to vary the terms of a written contract except where the warranty is an independent agreement and where the writing does not embrace the whole contract.

WARREN, wŏr'ĕn, **Sir Charles,** British general: b. Bangor, 7 Feb. 1840. He received a military education at Sandhurst and Woolwich, joined the Royal Engineers in 1857 and in 1861–65 was engaged in a survey of Gibraltar. During the three years following 1867 he carried out exploring work in Palestine for the Palestine Exploration Fund, and in 1876 was a commissioner for settling the western boundary of the Orange Free State. He commanded the Diamond Fields Horse in the Kaffir War of 1878, and during the immediately succeeding Griqua and Bechuana campaigns was commander of the field forces. He returned to England in 1880 and during the next four years was attached to the Chatham School of Military Engineering as instructor in surveying. He commanded the Bechuanaland expedition of 1884–85, and was in command at Suakim. From 1886 till his resignation in 1888 he was chief commissioner of the metropolitan police of London, and for five years from 1889 was in command of the troops in the Straits Settlements, with the temporary rank of major-general. He was commander of the Thames district 1895–98; commanded a division in the South African War of 1899–1902, and co-operated with Sir Redvers Buller in that attempt to relieve Ladysmith with which the occupation of Spion Kop is prominently associated. He was afterward appointed military governor of Griqualand West. He has published 'Underground Jerusalem' (1876); 'The Temple or the Tomb' (1880), and with C. R. Conder, 'Jerusalem' (1884).

WARREN, Francis Emory, American legislator: b. Hinsdale, Mass., 20 June 1844. He served in the Civil War as a non-commissioned officer in 1862–65 and received a Congressional medal for gallant conduct at Fort Hudson. He removed to Wyoming in 1868, became active in politics, was a member and president of the council, mayor of Cheyenne, treasurer of the Territory, and in 1885–86 was governor. In 1889 he again became governor and upon Wyoming's admission to Statehood in 1890 was elected first governor of the State; before the expiration of his term, however, he was elected to the United States Senate and has served almost continuously since in that body.

WARREN, Frederick Morris, American philologist: b. Durham, Me., 9 July 1859. He was graduated from Amherst in 1880 and engaged as instructor in modern languages at Johns Hopkins in 1886–91. In 1891–1901 he was professor of Romance languages at the Western Reserve University, and since 1901 has been professor of modern languages at Yale. He has published 'A Primer of French Literature' (1889); 'History of the Novel Previous to the Seventeenth Century' (1895), etc., and has also edited 'Selections from Victor Hugo' (1893); 'French Prose of the Seventeenth Century' (1899); Lamartine's 'Graziella' (1900), and 'Racine' (1903); 'Ten Frenchmen of the 19th Century' (1904), etc.

WARREN, Gouverneur Kemble, American military officer: b. Cold Spring, N. Y., 8 Jan. 1830; d. Newport, R. I., 8 Aug. 1882. He was graduated from West Point in 1850, was assigned to the engineering corps and until 1859 was engaged in making river and railway surveys between the Mississippi River and the Pacific Ocean. He was assistant professor of mathematics at West Point from 1859–61, when he became lieutenant-colonel and later colonel and captain of volunteers. For service at Gaines' Mills in 1862 he was promoted brigadier-general, and he became chief of topographical engineers in 1863, rising to chief of engineers in the Army of the Potomac in that year. He was on the staff of General Meade at the battle of Gettysburg, where on 2 July he seized and held Little Round Top, the key to the Federal position. He was promoted major-general of volunteers in May 1863 and in 1864 assumed command of the Fifth corps in the Army of the Potomac. He was subsequently placed in command of the Department of the Mississippi and in 1865 was mustered out of the volunteer service as brevet brigadier-general of regulars. He continued in the army, engaged in various surveys, and in 1879 was promoted lieutenant-

colonel. A statue was unveiled to his memory on Little Round Top, Gettysburg, 8 Aug. 1888. He published various reports and 'An Account of the 5th Army Corps at Five Forks' (1866).

WARREN, Henry Kimball, American college president: b. Cresco, Iowa, 31 May 1858. He was graduated from Olivet College in 1882, was principal of the public schools of Mount Pleasant, Mich., 1882–83 and of those of Hannibal, Mo., 1883–89. He was president of Gates College, Nebraska, 1889–94, of Salt Lake College, Utah, 1894–95 and for about 20 years thereafter was president of Yankton College, South Dakota.

WARREN, Henry White, American Methodist bishop: b. Williamsburg, Mass., 4 Jan. 1831; d. 1912. He was graduated from Wesleyan University in 1853 and in 1855 was admitted into the Methodist Conference. He was engaged for 15 years in various pastorates in Massachusetts; served in the Massachusetts house of representatives in 1861–62; was pastor of the Arch Street Church in Philadelphia in 1871–74, and in 1877–80; and in 1880 was elected bishop. He has traveled in almost all parts of the United States in the performance of his episcopal duties and visited Japan for inspecting the Methodist Church missions in 1888. He edited *The Study* in 1896–1900, and has published 'Sights and Insights' (1874); 'Recreations in Astronomy' (1879); 'The Bible in the World's Education' (1892); 'Among the Forces' (1898); 'Fifty-two Memory Hymns' (1908), etc.

WARREN, James, American Revolutionary leader: b. Plymouth, Mass., 28 Sept. 1726; d. there, 27 Nov. 1808. He was graduated at Harvard in 1745, and for several years was engaged in mercantile pursuits at Plymouth. He was elected a member of the General Court from Plymouth in 1766, was uniform in his support of the rights of the colonists and remained in that assembly until it was dissolved in 1774. In 1772 he took a leading part in the establishment of committees of correspondence for the different colonies, a measure generally adopted. He became president of the Massachusetts provincial congress in 1775, was paymaster to the Continental army while it was at Cambridge, after the adoption of the Massachusetts State constitution was for several years speaker of the House and held also a seat in the navy board.

WARREN, Sir John Borlase, English naval officer: b. Stapleford, Nottinghamshire, 1754; d. Greenwich, 27 Feb. 1822. He entered the navy as midshipman and after serving in that capacity for some time studied at Emanuel College, Cambridge, and took his degree in 1776. In 1774 he entered Parliament as member for Marlow, and in 1775 was created a baronet. In 1793, on the commencement of the war with France, he was appointed to the *Flora* frigate, and in 1795 commanded the expedition to Quiberon Bay to assist the insurrectionists of La Vendée, which was unsuccessful. On 11 Oct. 1798 he fell in with a French squadron off the coast of Ireland destined for the invasion of that country, and captured the *Hoche* line-of-battle ship and three frigates. For this he was subsequently made rear-admiral of the blue. He continued in the navy until the Peace of Amiens, when he was made privy councillor and sent to Russia as Ambassador Extraordinary and Minister Plenipotentiary, and there managed some delicate negotiations with regard to the retention of Malta with great ability. On his return he again entered into service, subsequently became vice-admiral, and in 1812 received the chief command in North America and the West Indies. He is the supposed author of an anonymous work entitled 'A View of the Naval Force of Great Britain' (8 vols., 1791).

WARREN, John Byrne Leicester, 3d Baron De Tabley, English poet: b. Tabley House, Cheshire, 26 April 1835; d. Ryde, Isle of Wight, 22 Nov. 1895. He was educated at Eton and Oxford, was called to the bar and after a short diplomatic experience devoted himself to literature. His life was passed in retirement, although he was the personal friend of Tennyson, Browning, Gladstone and other eminent men of his day. His poetry, which reveals many excellencies of style as well as depth of thought, appeals to the cultivated few, but not to the general public. His earliest work appeared with the signature "G. F. Preston" (1858–62), and later he used the pseudonym "William Lancaster." After 1873 his work appeared with his own name, John Leicester Warren. In 1893 he published 'Poems Dramatic and Lyrical by Lord De Tabley,' which met with qualified success, and in 1895 a second series appeared. Among his other volumes of verse are 'Præterita' (1870); 'Philoctetes' (1867); 'Orestes' (1868); 'Rehearsals' (1870); and 'Searching the Net' 1873). He also wrote two novels, 'A Screw Loose' (1868); 'Ropes of Sand' (1869).

WARREN, John Collins, American surgeon, son of John Warren (q.v.): b. Boston, Mass., 1 Aug. 1778; d. there, 4 May 1856. He was graduated at Harvard University in 1797 and later studied medicine in London, at Edinburgh University and in Paris. He returned to Boston in 1802, and finding his father in greatly impaired health he took over a considerable part of his practice. He became joint editor of the *Monthly Anthology* in 1803; was adjunct professor of anatomy and surgery at Harvard in 1806–15, and professor in those branches in 1815–47, succeeding his father. He was one of the founders of the Massachusetts General Hospital and was its chief surgeon the remainder of his life. He performed the first public operation in which ether was used as an anæsthesia in October 1846; he also performed the first operation for strangulated hernia in this country; and introduced Hunter's operation for aneurism. He was a voluminous writer, drawing upon a vast fund of personal experience as a surgeon. He was greatly interested in palæontology and owned a fine collection, securing for it in 1845 the most perfect specimen of a mastodon skeleton in existence. His collection of anatomical specimens formed the nucleus of the "Warren Museum" of the Harvard Medical School. He was one of the founders of the American Medical Association. Author of 'Cases of Organic Diseases of the Heart' (1809); 'A Comparative View of the Sensorial and Nervous Systems in Men and Animals' (1822); 'Surgical Operations on Tumors' (1837); 'Inhalation of Etheral Vapor

for the Prevention of Pain in Surgical Operations' (1846), etc.

WARREN, John Collins, American surgeon, son of John C. Warren (q.v.): b. Boston, Mass., 4 May 1842. He was graduated at Harvard University in 1863 and took his M.D. there in 1866, later studying in Vienna, Berlin, Paris and London. He engaged in practice at Boston in 1869; became a surgeon at the Massachusetts General Hospital; was associate professor of surgery at the Harvard Medical School in 1887–93, professor in 1893–1907 and has since been professor emeritus. He attained a high reputation as a surgeon both at home and abroad. In 1873–81 he edited the *Boston Medical and Surgical Journal.* Author of 'Anatomy and Development of Rodent Ulcer' (1872); 'Healing of Arteries after Ligature in Men and Animals' (1886); 'Surgical Pathology and Therapeutics' (1895), etc. He was also editor and part author of 'International Textbook of Surgery' (2 vols., 1900).

WARREN, Joseph, American patriot: b. Roxbury, Mass., 11 June 1741; d. Charlestown, Mass., 17 June 1775. He was graduated from Harvard in 1759, studied medicine with Dr. James Lloyd of Boston, entered the practice of his profession in 1764, and from the time of the Stamp Act (q.v.) (1765) contributed to the press. On the occasion of the Townshend revenue acts (see TOWNSHEND, CHARLES, 1725–67), imposing duties on paper, glass and tea, legalizing writs of assistance and forming a board of customs, Warren printed in the Boston *Gazette* over the signature "A True Patriot," a letter which caused Governor Francis Bernard to attempt the prosecution of the publishers on the ground that the article tended to bring the royal government into contempt. The attorney-general began proceedings, but the grand jury refused to find a bill. In 1770 Warren was one of the committee of safety appointed after the "Boston Massacre" of 5 March, and in 1772 he pronounced the memorial oration at the anniversary of that event. With Samuel Adams (q.v.) and James Otis (q.v.) he was recorded in November 1772 as a member of the first committee of correspondence, and during the next two years busily co-operated with Adams. When the latter left Boston, 10 Aug. 1774, to attend the meeting of the Continental Congress at Philadelphia, Warren became the leading figure in Massachusetts political movements. When the towns of Suffolk County assembled in convention at Milton, 9 Sept. 1774, Warren read a set of resolutions, drawn up by himself and since known as the "Suffolk resolves," which declared that a king who has violated the chartered rights of subjects forfeits their allegiance; that the "Regulating act," which had deprived Massachusetts without a previous notice and without a hearing of most important rights and liberties, was null and void; and directed tax-collectors to refuse to pay the moneys collected to Gates' treasurer, warned Gates that if patriots were arrested for political reasons royal officers would be held as hostages and counseled the towns to choose their own officers of militia. After the meeting of the Provincial Congress in October 1774, Warren was chairman of the committee of safety for collecting military stores and organizing a militia, and on 5 March 1775 delivered his second oration on the anniversary of the "massacre." He was unanimously elected president of the Provincial Congress at its Watertown meeting, 31 May, being thus made chief executive under the provisional government. On 14 June he was chosen second major-general of Massachusetts forces, and on 17 June went to Bunker (Breed's) Hill, where he told Putnam and Prescott that he had come to serve as a volunteer aide. At the final conflict near Prescott's redoubt he was shot and killed. Webster's apostrophe to him in the 'Bunker Hill Oration' as "the first great martyr in this great cause" is well known. The biography by Everett in Sparks' 'American Biography,' Vol. X (1838), has been superseded by that of Frothingham, 'Life and Times of Joseph Warren' (1865).

WARREN, Josiah, American social reformer: b. near Boston, Mass., 1799; d. Boston, 14 April 1874. He was an enthusiastic supporter of Robert Owen's communistic settlement at New Harmony, Ind., in 1825–26, and upon its failure he for a time abandoned the idea of communal living. He then formulated a theory of a time valuation of labor, placing all grades, skilled and unskilled, upon an equal basis. He established a time store at Cincinnati, Ohio, in 1826 and conducted it for two years on a plan of his own invention. His merchandise was sold at cost, plus a charge of 7 per cent to cover store maintenance, the customer paying in addition for the time of the salesman. In this experiment he also made use of labor notes with success. He later returned to the idea of communistic living, and his theories are still held in high esteem by the philosophical anarchists. Some of his opinions received favorable notice from John Stuart Mill. Author of 'True Civilization' (1846); 'Equitable Commerce' (1852).

WARREN, Mercy Otis, American patriot: b. Barnstable, Mass., 25 Sept. 1728; d. Plymouth, Mass., 19 Oct. 1814. She was Mrs. James Warren (see WARREN, JAMES), sister of James Otis (q.v.). An ardent patriot she corresponded with the leaders of the Revolution, among them Samuel and John Adams and Thomas Jefferson. She wrote some dramatic works which were included in her volume of 'Poems, Dramatic and Miscellaneous' (1790). Of these attempts in drama the best is the metrical 'Group,' satirizing British and Tory leaders. The chief of her writings, however, is the three-volume 'History of the Rise, Progress and Termination of the American Revolution, Interspersed with Biographical, Political and Moral Observations' (1805). Tyler admits the "tone of undisguised partisanship ringing through the book," but calls it a "powerful delineation of a great period," and says its character-sketches may still be found of interest.

WARREN, Minton, American philologist and educator: b. Providence, R. I., 29 Jan. 1850; d. 26 Nov. 1907. He was graduated at Tufts College in 1870, and took his Ph.D. at Strassburg University in 1879. He was professor of Latin at Johns Hopkins University until 1899, and held that chair at Harvard University from 1899 until he died. In 1896–97 he was director of the American School for Classical Studies at Rome, Italy; and in 1897 he was president of the American Philological Association. He con-

tributed many papers on epigraphy and Latin comedy to the learned journals.

WARREN, Samuel, English novelist: b. Denbighshire, Wales, 23 May 1807; d. London, 29 July 1877. He studied medicine at Edinburgh and law at the Inner Temple, was called to the bar in 1837 and was made queen's counsel in 1851. He was recorder of Hull (1854–74), represented Midhurst in Parliament (1856–59) and was appointed master in lunacy in 1859. His earliest work, 'Passages from the Diary of a Late Physician' (1832), appeared in several editions in both England and the United States, but his most popular work was 'Ten Thousand a Year' (1841), which has passed through many editions. It appeared in an abridged form in 1903. He published various other works, including 'Now and Then' (1847); 'The Lily and the Bee' (1851); and several law books.

WARREN, Whitney, American architect: b. New York. He studied architecture in New York and under Daumet and Girault at the École des Beaux Arts, Paris. In 1894 he established himself as an architect in New York, and in 1899 he designed the New York Yacht Club building. He afterward became a member of the firm of Warren and Wetmore, and was codesigner of the Grand Central Station, New York, completed in 1913; the Grand Trunk Station, Winnipeg, Canada; the Ritz-Carlton and Belmont hotels, New York; many fine private residences; the bronze gates at the cathedral of Saint John the Divine; and many other notable works. He received a silver medal at the Paris Exposition in 1900; became a member of the Académie des Beaux Arts of the French Institute in 1905; and was elected to the National Institute of Arts and Letters.

WARREN, William Fairfield, American educator: b. Williamsburg, Mass., 13 March 1833. He was graduated from Wesleyan University in 1853, ordained in the Methodist ministry in 1855 and for several years was professor of systematic theology at Frankfort, Germany. In 1866 he became acting president of the Boston Theological Seminary, and from 1873–1903 he was president of Boston University, occupying, also, during that time, the chair of philosophy of religion and comparative theology. His writings include 'The True Key to Ancient Cosmology' (1882); 'Paradise Found,' published also in Japanese, Chinese, Spanish and German (1885); 'The Story of Gottlieb,' translated into German and Arabic (1890); 'Constitutional Law Questions in the Methodist Episcopal Church' (1894); 'The Religion of the World and the World's Religion' (1900), etc.

WARREN, Ark., city and county-seat of Bradley County, situated in the north central part of the county, on the Missouri Pacific, Warren and Ouachita Valley and also the Warren-Johnsville and Saline River railroads, about 100 miles south of Little Rock. It contains several cottonseed-oil-, saw-, hardwood and stave mills. It has a high school, a junior high school, two ward schools, a negro public school, also a negro industrial school (Walters Institute), a courthouse and two banks with resources over $1,000,000; taxable property, $440,000. Pop. (including mill sections outside of corporation on account of taxes) about 5,000.

WARREN, Ill., village in Jo Daviess County, on the Illinois Central and the Chicago, Milwaukee and Saint Paul railroads, about 26 miles east by north of Galena and 25 miles northwest of Freeport. It is in an agricultural and stock-raising region, and near the lead mines of the Galena district. A good quality of tobacco is grown in the vicinity. The chief industrial establishments are flour mills, creameries and tobacco factories. The village has a high school, graded schools, a public library and a State bank. Pop. 1,330.

WARREN, Ind., town in Huntington County, on the Salomonie River, and on the Toledo, Saint Louis and Kansas City Railroad, about 75 miles north by west of Indianapolis and 15 miles south of Huntington, the county-seat. It is in a region of good farm lands and in a natural-gas and petroleum belt. The chief manufacturing establishments are flour and lumber mills, cooperage and machine shops. There are large shipments of hay, grain and live stock. Pop. 1,189.

WARREN, Me., town in Knox County, on Saint George's River, and on the Maine Central Railroad, 60 miles northeast of Portland. It was first permanently settled in 1736, though it was known as a trading post as early as 1631; it was incorporated as a town in 1776. There are large deposits of limestone in the town; and the river affords power for manufacturing; the town contains cotton and shoe factories, and a powder mill. There is a public high school. Pop. about 1,812.

WARREN, Mass., town in Worcester County, on the Chicopee River, and on the Boston and Albany Railroad, 18 miles west of Worcester. It includes the villages of Warren and West Warren. It was first settled in 1731, and in 1741 was incorporated as a town under the name of Western. In 1834 the name was changed to Warren. It contains cheese factories, cotton and woolen mills and manufactories of steam pumps and engines. It has a public high school established in 1870, and a public library of about 15,000 volumes, founded in 1876 by a library association. Pop. about 4,188.

WARREN, Ohio, city, county-seat of Trumbull County, on the Mahoning River, and on the Pennsylvania, the Erie and the Pittsburgh and Western railroads, about 50 miles southeast of Cleveland and 15 miles northwest of Youngstown. It is a region where much of the land is good for farming, but the chief industries of the city are connected with manufacturing iron products. Some of the principal manufactures are rolling mill products, flour, lumber products, automobiles, tubing, bath tubs, electric lamps, foundry and machine-shop products. It has about 75 factories, giving employment to 3,500 people, the annual value of products being about $7,000,000. The principal public buildings are the county courthouse, the municipal buildings, churches and schools. There are a high school, public graded schools and a public library containing about 10,000 volumes. There are five banks and two daily newspapers. Warren was founded in 1799; incorporated in 1834,

and has grown very rapidly in recent years. Pop. about 27,050.

WARREN, Pa., borough, county-seat of Warren County, on the Allegheny River, and on the Pennsylvania and the Western New York and Pennsylvania railroads, about 120 miles northeast of Pittsburgh and 20 miles south of Chautauqua Lake, N. Y. Warren was settled in 1795 by Daniel McQuay and was incorporated in 1832. The village of Gade was annexed in 1895. There are a large number of foreign-born inhabitants, chiefly Germans and Scandinavians. It is in an agricultural and oil region, but the chief industries are connected with oil products and manufacturing. The principal manufacturing establishments are iron and steel works, machinery, lumber mills, oil and gas engine factories, boiler works, piano and furniture factories. Other manufactures are wood alcohol, oil and the by-products, glue, barrels, machinery used with oil wells and for manufactories. In 1910 (government census) there were 72 manufacturing establishments. These give employment to about 2,000 persons, and produce about $6,000,000 annually. The principal public institutions are the county courthouse, the State Hospital for Insane, the churches and educational institutions. There are 15 churches representing seven different denominations. There are seven public schools, one Roman Catholic parish school, four private schools and a public library containing about 12,000 volumes. There are five banks and three daily newspapers. The government is administered according to the Pennsylvania statutes for boroughs, which provides for a burgess and a council of 14 members who hold office three years. Pop. 15,000.

WARREN, R. I., town in Bristol County, on the Warren River and Narragansett Bay, and on the New York, New Haven and Hartford Railroad, 10 miles southeast of Providence. It was the old Indian town of Sowamset; a trading post was established there by white men as early as 1632, but permanent settlement came later. It was in the territory in dispute between Rhode Island and Massachusetts, and originally formed a part of the town of Swansea, Mass.; after the boundary was settled and Warren came under the jurisdiction of Rhode Island it was incorporated as a town (1747); in 1770 the town of Barrington was separated from it. From 1764–70 it was the seat of the College of Rhode Island (now Brown University). During the Revolutionary War the town was pillaged by the British, and a number of houses burned. It is now largely a manufacturing town, its products including cotton goods, braid and twine. It has a public high school, and the George Hall Free Library, several banks and a newspaper. Pop. 7,240. Consult Fessenden, 'History of Warren.'

WARREN, (1) a tract of ground appropriated to the breeding and preservation of game or rabbits; also, a preserve for fish in a river. (2) In English law, a franchise or place privileged by prescription or grant from the Crown for keeping beasts and fowls of warren, which are hares, rabbits, partridges and pheasants, though some add quail, woodcock and water fowl. The warren is the next franchise in degree to the park, and a forest, which is the highest in dignity, comprehends a chase, a park, and a free warren.

WARRENSBURG, wŏr'ĕnz-bŭrg, Mo., city, county-seat of Johnson County, on the Black River, and on the Missouri Pacific Railroad, about 65 miles southeast of Kansas City. It is in a fertile agricultural region and in the vicinity are large sandstone quarries. It has several mineral springs, noted for their medicinal properties. The springs and climate have much to do with making the city a favorite pleasure and health resort. The chief manufacturing establishments are flour mills, foundries and machine shops, wagon and carriage factories and woolen mills. It has grain elevators, coal and stock yards. The city has the State Normal School for the Second district, a high school and graded elementary schools. There are three banks and four newspapers. Pop. about 4,689.

WARRENTON, Va., town, county-seat of Fauquier County, on the Southern Railroad, about 42 miles southwest of Washington, D. C. It is in the region of the foot-hills of the Blue Ridge and its picturesque scenery and cool climate in summer have made it a favorite summer resort. It has seven churches, a high school, Fauquier Institute, private select schools, a national bank and a private bank, and two newspapers. The town has gravity waterworks. Pop. 1,427.

WARRINGTON, wŏr'ĭng-tŏn, England, a manufacturing town in Lancashire, on the river Mersey and the Manchester Ship Canal, near the Sankey and Bridgewater canals, 15 miles east of Liverpool. The Latchford locks are notable features of the ship canal at Warrington. The public buildings and institutions include the restored parish church of Saint Elphin, in decorated style; other modern parish churches; Nonconformist and Roman Catholic churches; the town-hall, in classical style; the museum, containing a free library and municipal art-gallery; the grammar school, blue-coat school, clergy orphan daughters' school, Saint Elphin's schools, a training college for school mistresses, a municipal school of art, technical schools and other educational institutions; post office; public baths; the market-hall; municipal gas works, waterworks, tramways, electric light works; hospitals and an infirmary; a gymnasium; public parks and gardens; and military barracks. Of the numerous industries of the town the most important are the manufacture of iron and iron goods, wire, leather, soap and beer. Warrington is an ancient town and had at one time a house of Augustinian friars. The famous academy, which existed here from 1757 till 1783, had among its teachers Dr. Joseph Priestley, Dr. William Enfield, Dr. Aikin, Dr. John Taylor, the Rev. Gilbert Wakefield and other eminent men; it is now represented by Manchester College, Oxford. Pop. 74,157.

WARRNAMBOOL, wâr'nąm-bool, Australia, a seaport town in Victoria, on Warrnambool or Lady Bay, 166 miles southwest of Melbourne. The principal public buildings are the Episcopal, Roman Catholic and other churches, various banking and insurance offices, mechanics' institute, the Odd Fellows' and the volunteer artillery halls, a hospital and benevo-

lent asylum, etc. Steamers ply several times a week to Melbourne and a good trade is done from the port in wool and other agricultural produce. The town contains a flour mill, biscuit factories, boot factories, tanneries, breweries, etc. Pop. about 7,500.

WARS OF THE WORLD. The story of the wars of the world, if told in anything like its entirety, would be practically a history of the human race, for wherever nations have risen to greatness and have bred men capable of performing great deeds the records of these acts of heroism have almost invariably been made on those fields of battle upon which the supremacy of the nation itself has been accomplished. In the record of the wars of the world the student may read the tale of human progress — the story of the advance of civilization — for it cannot be denied that man's high place in the world to-day is largely a reward bestowed upon him in return for the brutality and bloodshed of the battlefields upon which his ancestors fought. That there have been wars that have been unnecessary is a fact that cannot be questioned, any more than one would deny that warfare has often been unnecessarily brutal, and yet, from a logical point of view, these are merely incidents which reflect upon but do not detract from the integrity of the original propositions: that war is the means by which superior nations have attained their superiority; that most wars have brought about some good to humanity as a whole; that by war civilization was extended and that in the winnowing process afforded by such international conflicts the fittest alone have survived and all that which was opposed to human progress or contrary to the best interests of civilization has been cast aside, to be lost and, eventually, forgotten by all save the historian who does not deign to record the most ignoble things in the life and customs of the earth's peoples.

Early History.— Unfortunately it is impossible to state, even approximately, when the first battle of the world was fought. In the early ages, of course, primitive man had all he could do to maintain a bare existence and preserve himself against the fury of the wild beasts so eager to attack him; but even tradition furnishes no clue to enable the student to discover at what period men first turned against other men to do battle with the crude instruments that had been devised only as a means of protecting themselves from the savage animals in the forests. Probably there were wars many thousands of years before recorded history. All we know is that Osymandyas of Egypt, supposed by some to be the Osiris of the priests, is the first warlike king mentioned by history. He passed into Asia and conquered Bactria, about the year 2100 B.C. If Osymandyas was the first warlike king, however, he was not the last, for in 1900 it was estimated that since his time no less than 6,860,000,000 men have lost their lives on fields of battle and the millions slain in the Great World War are yet uncounted; but, in spite of this grewsome record, men have fought and will probably continue to conduct wars against each other, while all nations will be compelled to arm themselves with the latest fighting inventions, for, with the history of the past to guide them, they realize only too well the Power that is not always prepared to protect its rights and properties with the sword may not unlikely find itself with very little except its honor to defend. Probably the first wars originated in nomad life and these conflicts were undoubtedly occasioned by the disputes which arose between the various tribes in regard to their rights of possession in favorable pasturage. When all tribes devoted themselves to the flocks and herds there was little to discriminate between them, but, gradually, certain tribes began to assume different characteristics. One became attached to the art of agriculture; another devoted its time to hunting and fishing, while a third class still remained shepherds of the flocks. It was this difference of occupation which finally became the natural source of hostilities, for it established a series of classes, the stronger of which began to prey upon the weaker. Naturally, those who devoted themselves to the hunt became the victors in war, and, by reducing their victims to a condition of slavery, threw the manual labor, which they despised, upon the shoulders of others. In fact, there is a tradition in western Asia, that Nimrod, who is mentioned in the Bible as "a mighty hunter before the Lord," was the first person to engage upon an extensive system of warfare for the express purpose of obtaining slaves and that it was he who introduced the practice of requiring conquered nations to pay an annual tribute, or, in other words, a ransom for their release. However true this may be we find that the ancient Old Testament days were full of such warfare, in which the outcome was either tribute or slavery. History began on the banks of the Nile and along the Tigris and the Euphrates; for these valleys, like two great oases, were practically the only habitable spots in the great desert. Fitted with all known conveniences for travel, with roads suitable for the passage of vast armies, these two centres of habitation finally became great rivals. In fact, whenever any particularly energetic ruler appeared in either spot he at once set out, as if moved by an irresistible impulse, to conquer his rival and so control western Asia. It may truthfully be said, therefore, that the history of this time is little more than one continuous record of struggles between Egypt and Mesopotamia, a condition which existed until Europe entered the lists and became the conqueror. In Egypt, during this age, the military class held such a prominent position in society that fully one-third of the land was in the possession of the 410,000 men who composed the army.

As the Persians trusted for success mainly to numbers, war to them was little more than an exhibition of brute force. Sometimes as many as 1,000,000 men were brought into service for one campaign. In battle the troops were massed in deep ranks, those which were supposed to be the bravest being in front, but, if the line of battle was once broken, defeat appears to have been inevitable, for the army lost heart, even if the commander himself did not set the example of flight and the general stampede that followed usually cleared the battlefield. Rawlinson's description of the appearance of the Persian forces in time of

war is one of the most vivid word pictures painted by any historian:

The troops were drawn from the entire empire, and were marshaled in the field according to nations, each tribe accoutred in its own fashion. Here were seen the gilded breastplates and scarlet kilts of the Persians and Medes; there the woolen skirt of the Arab, the leathern jerkin of the Berber, or the cotton dress of the native of Hindustan. Swart savage Ethiops from the Upper Nile, adorned with a war paint of white and red, and scantily clad with the skins of leopards and lions, fought in one place with huge clubs, arrows tipped with stone, and spears terminating in the horn of an antelope. In another, Scyths, with their loose spangled trousers and their tall pointed caps, dealt death around from their unerring blows; while near them Assyrians, helmeted, and wearing corselets of quilted linen, wielded the tough spear or the still more formidable iron mace. Rude weapons, like cane bows, unfeathered arrows, and stakes hardened at one end in the fire, were seen side by side with keen swords and daggers of the best steel, the finished productions of the workshops of Phœnicia and Greece. Here the bronze helmet was surmounted with the ears and horns of an ox; there it was superseded by a fox-skin, a leathern or wooden skull cap, or a head dress fashioned out of a horse's scalp. Besides horses and mules, elephants, camels and wild asses diversified the scene, and rendered it still more strange and wonderful.

Wars of the Romans.—Although the Persians fought and won battles in spite of their crude methods of fighting, Greece was the mother of the art of warfare. It must not be imagined, however, that the splendid body of perfectly trained soldiery comprising the armies of Athens, Sparta, Thebes or Macedon was the product of a day, or of the genius of a single man, for nothing less than centuries were required for the perfection of this wonderful force. In the heroic days, the days of the Homeric battles, the Greek soldiers were no more to be commended than their Persian rivals. Loosely organized, poorly drilled and badly equipped, the mass of the army was capable of doing little more than give the inspiration of numerical strength to the small bodies of heroes who did all the fighting. At length, however, the idea of the phalanx evolved itself, and, in a remarkably brief period of time, the history of the world was changed. At no time prior to the invention of the modern instruments of war has man conceived such a formidable weapon as the attack of a charging phalanx. It was this powerful engine of war that accomplished the downfall of the Persian force at Marathon. It was a still more perfect phalanx that resulted in the defeat of Thebes and the victory of Macedon on the fields of Chæronea. It was clearly the Greek phalanx—solid, erect and terrible in its effect—that enabled Alexander to inaugurate the campaign that had for its purpose the conquering of the entire known world. It was with the aid of the phalanx that Athens was preserved; that the Peloponnesian war was won by Sparta, and it was this same maneuver that saved the day for the Greek forces, until, at last, the Roman legions swept down upon a degenerate Macedon to declare the end of the Grecian Empire. The story of Rome's supremacy is not dissimilar to that of the rise and fall of the Grecian power. She scorned to make use of the phalanx, her legions fighting in such open formation that those in the front rank could fall back, when weary, and allow those in the second file to advance and take their places and yet the discipline and generalship of the great army was so perfect that it succeeded in establishing a wider empire than that of Alexander's, an empire which, in 133 B.C., included all of Southern Europe from the Atlantic to the Bosporus, as well as a part of Northern Africa. Syria, Egypt and Asia Minor were then Roman dependencies. Her army had made her practically mistress of the civilized world. Several centuries elapsed before Rome's glories began to fade. During this time her power was still further extended, civil wars had been suppressed and revolutions crushed, for when the Roman army could fight according to the scientific rules of warfare it was practically an invincible force. When the destroyers of the great empire came, however, they brought with them no knowledge of the science of war which Rome knew so well. To Alaric the Goth, Attila the Hun, and Genseric the Vandal, war was simply a question of mere numerical human strength. They had no more idea of the advancement in military art than had the Saracen horde that swept across the country and that might have planted the standard of Islam in every nook and corner of Europe if Charles Martel had not won his great victory on the plain of Tours. Against these three great barbaric leaders Rome was almost powerless and as they swept down upon her, as one wave of the sea follows another, Rome fell, never to rise again. City after city was spoiled and burned; Rome, even, opened her gates without a blow. The tiara and purple robes of the empire were sent to Constantinople and Zeno appointed Odoacer to be Patrician of Italy.

The Middle Ages.—From the fall of Rome and up to the close of the 15th century, wars were less frequent between nation and nation than among the various nations themselves. French fought French; Germans, Germans, and Spaniards, Spaniards and even the war between the English and the French, the war that desolated France for more than a century, was no exception to this rule, for the enmity that was the cause of all the strife was not that of two rival nations, but was due entirely to the fact that the rulers of England were French princes, themselves hereditary sovereigns of French provinces, like Normandy or Poitou. Similar conditions existed in other parts of Europe so that the student who reads of the wars of the Middle Ages is struck by the absence of the well-planned and carefully executed campaigns that distinguished the warfare of both previous and later periods. There were civil wars, it is true; local insurrections, or single battles of more or less importance, but, with the exception of the invasion of the Saracens, the expeditions of Charlemagne, and the conquests of England by the Danes and the Normans, there is little to remind one of the well-organized systems of warfare which distinguished the days of Greece and Rome and which have since been revived by nations of modern times. It was not until almost the close of the Middle Ages that anything was done to improve the art of war as it was known to the ancients. Then the invention of gunpowder and the abandonment of armor revolutionized the science of fighting. Strange as it may seem, however, gunpowder was known for more than two centuries before the French, at the close of the 16th century, armed their soldiers with matchlock muskets, while conservative England, fearing that archery would be superseded, forbade the use

of the new weapon as late as the time of Henry VIII.

Modern Warfare.— By Gustavus Adolphus, "the father of the modern art of war," as he is called by Colonel Dodge, his biographer, the new weapon was accepted at its true worth, and, arming his corps with them, he evolved the then original plan of preparing an attack with artillery. The adoption of the musket, however, was not the only development in warfare that may be traced to this great strategist, for it was he who first substituted the line for the mass formation, one of the greatest innovations in modern tactics. It was not until the close of the Middle Ages, therefore, that military science, having slept for centuries, awoke to the possibilities of greater perfection in armament as well as in discipline. From the time of Gustavus Adolphus and Frederick the Great up to and after the close of the Civil War in America, military methods were undergoing such a change that the period may be regarded as that of the rehabilitation of the science of warfare, for nearly every kind of arm or maneuver that was in use during the Middle Ages has now become obsolete. In the accomplishment of all this improvement in armament and tactics credit is due to all the great generals, including Napoleon, who hired the best mechanics to make experiments for him and who gave to Europe its first breech-loader. To-day, however, everything but the small calibre rifle, and possibly the bayonet, has been relegated to the scrap heap, just as the antique fighting tactics, like the various variations of the phalanx and mass formations, have given place to a more and more open formation, as the perfection in the fighting arms has required such alterations in the fighting methods of the world's armies.

Decisive Battles.— Creasy, the historian of warfare, who treats of incidental battles rather than of connected wars, selects the following as the "Fifteen Decisive Battles of the World":

1. Marathon, at which, on 28 Sept. 490 B.C., 11,000 Greeks defeated a Persian force numbering more than 110,000 men. The Grecian army was commanded by such generals of genius as Miltiades, Aristides and Themistocles. The Persianarmy was forced to retreat to Asia.

2. Syracuse, 419 B.C., when the besieged Syracusans turned upon the invading Athenians, almost completely destroying their forces, driving them, "with heavy slaughter, over the cliffs, which an hour or two before they had scaled full of hopes and confident of success."

3. Arbela, the battle between Alexander the Great and Darius Codomanus which decided the fate of the Persians; 1 Oct. 331 B.C.

4. Metaurus, at which Hasdrubal, the brother of Hannibal, was defeated and slain by the Roman army under the command of Livius and Claudius Nero; 207 B.C.

5. Teutoburg, 9 A.D., the battle at which Varus and the Romans were defeated by the Germans, and which was regarded at Rome as such a national calamity that Augustus is said to have cried aloud in agony, "Varus, give me my legions!"

6. Chalons, at which, in 451 A.D., Actius defeated Attila the Hun, compelling him to retire into Pannonia.

7. Tours, at which Charles Martel saved Europe by his great victory over the invading hosts of the Saracens. This conflict is also sometimes known as the battle of Poitiers: 732 A.D.

8. Hastings, at which, on 14 Oct. 1066, Harold II of England lost his life and kingdom in battle against William, Duke of Normandy.

9. Orleans, besieged by the English during October 1428; it was bravely defended by Goucour, who realized that its fall would bring ruin to the cause of Charles IV of France. On 8 May 1429, the siege was raised as the result of the heroism of Joan of Arc.

10. The Spanish Armada, the naval battle at which the Spanish fleet was almost completely destroyed by the British.

11. Blenheim, at which the French and Bavarians were defeated by the English under the Duke of Marlborough, 2 Aug. 1704.

12. Pultowa, where Charles XII of Sweden was completely defeated by the Saxons; 1 May 1703.

13. Saratoga, the engagement regarded as the greatest check suffered by the British forces during the Revolutionary War in America. At this battle, fought on 17 Oct. 1777, the British general, Burgoyne, still flushed by his victory at Germantown, was obliged to surrender his entire force of 5,791 men to the American commander, General Gates.

14. Valmy, where the French, commanded by Kellerman, defeated the Prussians, commanded by the Duke of Brunswick, 20 Sept. 1792.

15. Waterloo, at which the great Napoleon was compelled to accept defeat at the hands of the Duke of Wellington's forces; 18 June 1815.

And to them we now add the prolonged battle of the Mense in 1918 when the Allies under Foch turned back the German tide.

Wars of the World.— Irrespective of the character of the individual battles the following list of the most important wars that have been waged between the various nations since the Middle Ages is generally regarded as reasonably complete and thoroughly representative:

1455–1485. *The War of the Roses*, which ended with the defeat and death of Richard III at Bosworth, 22 Aug. 1485. The war was between the Lancastrians and the Yorkists and obtained its name from the fact that the former wore the red rose as their emblem, and the latter, the white. The union of the roses was consummated in 1486, when Henry VII was married to Princess Elizabeth, daughter of Edward IV.

1587–1588. *War of the Armada.* In 1587 Philip II, king of Spain, collected and equipped what he believed to be an invincible fleet, for the purpose of effecting the subjugation of England. Although it consisted of more than 130 ships and was manned by picked men, it was practically destroyed by the British fleet, commanded by Sir Francis Drake, Sir John Hawkins and Lord Charles Howard, 29 July 1588.

1618–1648. *The Thirty Years' War* between the Catholics and Protestants of Germany. Beginning in Bohemia, in 1618, it ended with the Peace of Westphalia, 30 years later.

1648–1652. *The Civil War of the Fronde* may not be one of the great wars of the world, but it is so thoroughly representative of the conditions of the times that it is usually included in such lists. It originated in the minority of Louis XIV, and during the reign of Queen Anne of Austria and Cardinal Mazarin, and was strictly a war of classes. On one side were ranged the supporters of the court and the nobility, while the citizens, supported by the Parliament, were arrayed against them. It ended with the ignoble defeat of Conde at the battle of Saint Antoine.

1702–1713. *War of the Spanish Succession*, a conflict which arose over the question whether an Austrian or a French prince should succeed to the throne of Spain. From the beginning the British court was opposed to Louis and the successes of the Duke of Marlborough would have delivered the throne to the Austrians if the allies, by withdrawing one after another, had not left the Bourbons free to succeed.

1741–1748. *War of the Austrian Succession.* At the death of Emperor Charles VI, his daughter, Maria Theresa, attempted to assume control of the throne which the great powers of Europe had guaranteed to her under the law known as the Pragmatic Sanction. Contrary to their agreement, however, all the powers except England determined to rob her of her inheritance. The plot failed and the peace of Aix-la-Chapelle was signed, Frederick the Great being the only monarch to profit by the conflict. He was bought off by the cession of Silesia.

1756–1763. *The Seven Years' War* was the result of Maria Theresa's determination to recover the Silesian territory which she had ceded to Prussia. By careful diplomacy an alliance was formed between Austria and France, Russia, Saxony, Sweden and Poland, leaving England as the only power to which Prussia could look for support. Although it was believed that Frederick would be unable to stand against such odds he was so generally victorious that he was not only able to retain his control over Silesia, but his successes in battle established the position of Prussia as one of the five great nations of the world.

1775–1782. *War of the American Revolution.* The revolt of the American colonists as a protest against English oppression is one of the most serious conflicts in which England has been engaged, costing, as it did, the greater part of her American possessions. The war culminated with the signing of the treaty of Paris, 30 Nov. 1782.

1789–1794. *War of the French Revolution.* The uprising in France was distinctly a class awakening, but it resulted in the abolition of the monarchy and the establishment of the first republic. During this period of internal agitation, however, other nations took advantage of the supposed opportunity to meet France with less danger to themselves and yet, during the very days when the Terrorists were

sending their victims to the guillotine the republican army was enjoying such continued success that several threatened frontiers were pacified; Belgium was overrun; Holland conquered, and peace was signed with Prussia and Spain.

1796–1797. In *the Italian Campaign*, Bonaparte, the new military figure in European affairs, was given his first opportunity to exhibit his great genius for generalship, for with a force of 38,000 men destitute of everything but courage, he advanced upon three well-equipped bodies of the flower of Italian and Austrian soldiery, vanquished them and was already in the act of advancing upon Vienna when the Austrian government, in consternation, asked for a suspension of hostilities. The treaty of Campo Formio, signed in 1797, was the result. By this France took Belgium and the long-coveted boundary of the Rhine, while Venice and its dependencies were apportioned to Austria.

1803–1815. *The Wars with Bonaparte*, which may be said to have commenced with Austerlitz and to have ended only with Waterloo, occupied the attention of Europe for more than 12 years. The third coalition, which was formed to resist Napoleon's projects of advancement, consisted of England, Austria and Russia, but the "Sun of Austerlitz" went down upon a defeat so crushing that the conquered were glad to accept the terms of the treaty of Presburg, even at the cost of the very existance of the Holy Roman Empire which had continued for more than 1,000 years. In 1806 a fourth coalition, composed of Prussia, Russia and England, was formed, but in one day Napoleon annihilated their armies, and, entering Berlin, rifled even the tomb of Frederick the Great. A year later, 1807, saw the humiliation of Russia made complete, for while the battle of Eylau may be said to have been indecisive, there could be no question about the victory of Friedland, and Alexander, forced to sue for peace, signed the treaty of Tilsit. The Peninsula Campaign in 1808; the war with Austria in 1809, and the war in Spain, 1809–12, were continuous exhibitions of the power of the French bayonets, and it was not until the Russian campaign, 1812, when the French army retreated from Moscow like a mass of straggling fugitives, that the powers of Europe saw an opportunity to shake off the yoke which the bold usurper had forced them to bear. Again there was a coalition formed, a gigantic confederation of power which included the forces of England, Russia, Prussia and Sweden, and while Napoleon's new army succeeded in defeating the allies at Lutzen, Bautzen and Dresden, his own fall at the terrible battle of Leipzig sent him back to Paris to prepare for the inevitable fate which Fortune had in store for him, the fate of Waterloo and his own abdication.

1812–1814. *The War of* 1812 between Great Britain and the United States, which was caused by the aggressions of the British and their refusal to recognize the rights of the American republic on the high seas, resulted in the defeat of the English invaders. It concluded with the treaty of Ghent, signed 14 Dec. 1814.

1821–1829. *The Greek War of Independence* was the culmination of four centuries of Turkish bondage. Prior to this there had been several uprisings, all of which had been crushed with relentless cruelty, but the revolt that broke out in 1821 was of a different character, as many Europeans contributed both their money and their services to aid the Greek insurgents. During the contest which followed fully one-half of the population is said to have perished, and the Turks, who had called the Egyptians to their assistance, seemed likely to overwhelm the revolutionists when England, Russia and France formed a league to help the Hellenes. As the result the fleets of the combined forces defeated the Turks and the Egyptians in the bay of Navarino; the French troops drove the Egyptians from the Peloponnesus, and freedom for Greece was at last attained.

1831–1839. *The Belgian War of Independence* was inspired by practically no other cause than that of a desire for freedom. The revolutions in America, in France and in Greece were a means of inspiration, and as Belgium had never been in sympathy with Holland it required but a spark to kindle the flame of insurrection. In 1839, therefore, the independence of Belgium was declared.

1845–1848. *The Mexican War* with the United States resulted from the annexation of Texas, the independence of which had never been recognised by the Mexican government, and from Mexico's refusal to treat with the United States regarding the adjustment of the boundary. After several sharp engagements, in nearly all of which the United States forces were overwhelmingly victorious, Mexico City was taken and peace was proclaimed, 4 July 1848.

1853–1855. *The Crimean War* grew out of a dispute between the Greek and Latin churches as to the right of exclusive possession of the Holy Places in Palestine. France and Russia took opposite sides upon the question, but when a mixed commission decided in favor of the Greeks and against France, the French acceded. Russia, on the other hand, continued to make demands upon the sultan, commanding, among other things, that the tsar be recognized by treaty as the official protector of Christians within the limits of the Turkish domain. In 1853 the tsar also proposed that England should join with him in partitioning the sultan's empire, a proposition which was immediately refused. In view of the strained relations, however, it was but natural that Turkey should declare war against Russia. In 1854 both England and France came to the sultan's aid, and, an expedition against the Crimea having been decided upon, the allied forces, numbering nearly 60,000 men, attacked the Russians, who, under the command of Prince Menschikoff, had intrenched themselves, 50,000 strong, on the heights of Alma, a position which was supposed to be unassailable. In spite of this, after one sharp contest, the Russians were routed. Peace was proclaimed in April 1856.

1856–1857. *The Persian War.* The taking of Herat by the Persians, 25 Oct. 1856, was considered such a violation of the treaty of 1853 by the British that war ensued between Great Britain and Persia. Several sharp battles followed, in which the Persian forces suffered defeat, and final peace was proclaimed in April 1857.

1857–1859. *The Indian Mutiny*, which continued for nearly two years, grew out of a revolt of the sepoys, or native soldiers in India. The original cause of the trouble was that the cartridges given to them were said to be greased with tallow or lard, which was regarded as an insult to their religion, a Hindu being forbidden to touch cow's fat; and a Mohammedan, lard. It was late in 1859, before the rebellion was finally crushed, while, in the meantime, the white residents at Delhi, Cawnpore, and many other places were massacred with terrible brutality. Those at Lucknow were just able to hold the city until relief arrived.

1861–1865. *The Civil War in the United States*, which resulted in the defeat of the Southern forces, the re-establishment of the Union, and the emancipation of the slaves.

1868–1899. *Cuban War for Independence.* Although the first attempt to wrest the island of Cuba from the hands of Spain was made as early as 1850, the first insurrection, or formal revolution, did not occur until the fall of 1868. From that time, however, revolutions were of frequent occurrence, but all were suppressed by the Spanish forces until 1898, when the United States formed an alliance with the revolutionists, thus enabling Cuba to obtain the freedom that had so long been denied.

1870–1871. The actual cause of *the Franco-Prussian War* was the jealousy of Emperor Napoleon, who had been an impotent witness of the success of Bismarck's negotiations, which had resulted in the greatly increased power of Prussia. More definite excuses were found, of course: the refusal of Prussia to permit the French to purchase Luxemburg from the king of Holland, and the effort of Bismarck to place Prince Leopold of Hohenzollern-Sigmaringen on the throne of Spain being two of them; but it is the consensus of opinion among historians that the war was both premeditated and unjust, and that as the emperor had been misinformed both as to the numerical strength of his army and to its state of preparation, his surrender was practically a foregone conclusion from the beginning of the conflict.

1876–1903. *The Anglo-Boer War.* Although separated by lapses of several years the hard feeling which always existed between Great Britain and the small South African republics resulted in many serious disturbances which culminated, in 1900, in the Anglo-Boer War, the complete victory of the English arms and the subjection of the South African farmers.

1877–1878. *The Russo-Turkish War.* The spirit of revolution which spread through nearly all the Turkish possessions during 1875 and 1876 and which resulted in the revolt of Bosnia and Herzegovina and Bulgaria, and the declarations of war by Servia and Montenegro, was the immediate cause of the Russo-Turkish war, which ended with Russian victory, 3 March 1878.

1894–1895. *Chinese-Japanese War.* A revolt in Corea and a call upon China for assistance was the direct cause of the conflict between China and Japan. When the latter power, uninvited, sent troops with a proposal of joint action against the revolutionists, China protested vigorously, and, after much dispute, the war began. It resulted in Japanese victory and the cession of much territory on the part of China, considerable of which Japan was compelled to relinquish because of the protests of Russia, France and Germany.

1898–1899. *The Spanish-American War* was the natural outcome of the interference of the United States in the war between Spain and her revolutionary colony, Cuba. Having fought with great bravery and against almost overwhelming odds for years the state of insurrection had degenerated into such barbarous cruelty on the part of those who were striving to suppress it that the American people decided that it had passed the bounds of humane warfare. For this, and several other reasons, Congress determined to give assistance to Cuba, upon which war was promptly declared. It resulted in overwhelming defeat for the Spanish forces, independence for Cuba, and the accession of considerable colonial territory by the United States.

1904. *Russo-Japanese War.* Russia's eagerness to extend her territory to such an extent as to secure ports that should be open at all seasons of the year — a desire which made her seise upon Manchuria with a firm hand and tempted her to cast covetous eyes upon Korea — was

the cause of such strenuous objection upon the part of Japan that the Russo-Japanese war resulted.

1914–18. *The European War.* Germany's rampant imperialism and her insidious commercial propaganda turned the Europe of the opening 20th century into an armed camp, driving republican France into the arms of Tsaristic Russia, and obliging Great Britain to relinquish her cherished policy of "splendid isolation." Austria was urged on by Germany to repress the growing Slav sentiment in the Balkans although such a course involved the active participation of Russia and the other members of the Entente. The violation of Belgian neutrality by Germany made Great Britain a belligerent, and in the later developments all the leading countries of the world became involved in the conflict, either because of their political or economic alliances, or, as in the case of the United States, because of the violation of the rights of their citizens.

JOHN R. MEADER.

WARSAW, wâr'sâ, Ill., town in Hancock County, on the Mississippi River and on the Toledo, Peoria and Western Railroad, 100 miles southwest of Peoria and five miles from Keokuk, Iowa. Fort Edwards was established within the limits of the town in the War of 1812. The largest river steamers can ascend the Mississippi to the town; and it is a shipping point for the agricultural produce of the region. It also has several manufacturing industries, including cooperage works, flour and woolen mills, pickle works, shoe, button and incubator factories and manufactories of agricultural implements. It contains a public high school, banks and a newspaper. Pop. 2,254.

WARSAW, Ind., city, county-seat of Kosciusko County, on the Tippecanoe River and on the pittsburgh, Fort Wayne and Chicago and the Cleveland, Cincinnati, Chicago and Saint Louis railroads, 40 miles west by north of Fort Wayne and 125 miles north of Indianapolis. It was settled in 1836 and chosen as the county-seat in 1837; it was incorporated as a town in 1854 and as a city in 1867. It is in a lake region, and is popular as a summer resort. It is also an agricultural region and is the chief trade centre of the county. It has large canning and pickling works, flour mills, creameries and manufactories of agricultural implements and vacuum cleaners. A large park and the county courthouse are among its notable features. There is also a public high school established in 1872, a public library, banks and two daily newspapers. Pop. 4,430.

WARSAW, N. Y., village, county-seat of Wyoming County, in the valley of the Oatka Creek, on the Erie, and the Buffalo, Rochester and Pittsburgh railroads, 37 miles southwest of Rochester. It was first settled in 1804, and was incorporated as a village in 1816. It is in an agricultural region; and there are important salt deposits in the vicinity. The village contains salt works, broom factories, manufactories of knit goods, a button factory, foundry, carriage factories, lumber and saw mills. It has a public high school, established in 1897, with a large library of about 20,000 volumes, two newspapers and several banks. The waterworks are owned and operated by the village. Pop. 3,424.

WARSAW, Poland, the capital and largest city of the Republic, situated partly on a flat, and partly on a height rising gradually from the left bank of the Vistula, here crossed by an iron bridge 1,660 feet long, and by a railway bridge, communicating with the suburb of Praga, 325 miles east of Berlin. It consists of the city proper and several suburbs, enclosed for the most part along with it by a rampart and fosse, and dominated by a vast citadel erected by the Russians. In the older parts the streets are narrow, and the houses, generally of indifferent appearance, are huddled together without any order; in the newer part, and more especially in some of the suburbs, the streets are often spacious and many ranges of handsome buildings are seen. There are several large public squares, among which that of Sigismund, adorned with a bronze colossal statue of the third king of that name, is particularly deserving of notice; and the vicinity is well provided with beautiful promenades. The more remarkable public buildings are the Roman Catholic cathedral, the Russian cathedral, the Church of the Holy Cross, the Church of the Carmelites, the Lutheran Church, the Zamek or ancient castle of the Polish kings, a huge pile on a height overhanging the Vistula; the palace of Casimir, occupied by the university and adorned in front with a statue of Copernicus; the Saxon palace, with fine gardens attached to it; the Krasinsky palace, occupied partly by the superior courts of law and partly by government offices; several other palaces similarly occupied; the town-house, arsenal, mint, custom-house, exchange, barracks, several theatres, and the bazaar of Marieville, consisting of a large square lined with arcades. The principal educational establishments are the university, suppressed after the rebellion of 1830, reopened in 1864, and having 2,500 students before the outbreak of the World War; a lyceum, technical, commercial, and many other schools. Among the benevolent institutions are a town and a military hospital, a foundling hospital, a deaf and dumb and two lunatic asylums. The manufactures consist of metals, beer, tobacco, textiles, chemical products, furniture, artificial flowers, musical instruments, etc. There are a vast number of small industries and factories, giving employment to over one-third of the population. The trade is very extensive, Warsaw being by far the most important commercial emporium of Russian Poland, and carrying on a large traffic both with the interior and with Thorn and Dantzig, by means of the Vistula. Warsaw, though very ancient, did not become the capital of Poland till about the middle of the 16th century, when it superseded Cracow. It has witnessed much warfare, the suburb Praga generally being the field of action. Here in 1656 the Poles were defeated by Charles Gustavus of Sweden. The chief interest belonging to the city is connected with the insurrection of 1794, when after the capture of Kosciusko at Maciejowice, the dispirited and disorganized remnants of the Polish army defended the ramparts of Praga against the victorious Russian forces under Suwaroff. On 3 Nov. 1794, the Russian general ordered an assault, and after a fierce struggle the ramparts were carried, more than 15,000 Polish soldiers being slain, drowned in the Vistual, or taken prisoners, and an almost equal number of unarmed inhabitants of every age and sex brutally massacred. In the evening a great fire arose, which destroyed a large part of the city. In 1807 it was the capital of the Duchy of Warsaw, and in 1813 was acquired by Russia.

(See POLAND). The vicinity of Warsaw was also the principal seat of the Polish War in 1831, and the Germans occupied it in 1915. In November 1918 Polish troops occupied Warsaw which again had become the capital of an independent Poland. The population of the city is about 900,000, of whom about a fourth are Jews.

WARSAW, University of, a Polish university founded in 1816 and opened in 1818. It was suppressed in 1830 as a result of the insurrection of that year but was reopened in 1869. After 1884 it was completely Russianized. There are extensive laboratories, an observatory, botanical gardens and a library of nearly 600,000 volumes, including a splendid collection of Polish works, despite the fact that after the suppression of 1830 the university's library was removed to Petrograd. At the outbreak of the European War there were four faculties, those of history and philology, law, medicine and physics, and mathematics. There were about 100 instructors and 1,600 students. After the occupation by the Germans in 1915 a Polish faculty was installed.

WARSHIPS, Ancient. The first warships of recorded history were the great rowboats of the Mediterranean, with two and three oar-decks, where galley-slaves were chained to their tasks. These vessels were far superior to sailing craft for fighting purposes, as they could force their way at any time, whereas the sailing ships had to wait for the wind. The fighting naval weapons of those days were bows and arrows, javelins and spears and burning balls flung at the enemy to destroy their ships. It was important to protect the rowers or galley-slaves as well as the fighting men and hence some sort of protective armor was sought from the earliest times. The ships of the Greeks and Romans were often fortified with a thick fence of hides which served to repel the missiles of their enemies and afforded protection to their own crews. Thick timbers and hides entered into the construction of the turrets and towers with which the fighting ships of ancient and mediæval times were fitted, especially when used for harbor defense, as in the Venetian turret ship of the 9th century. Felt made an early appearance as a defensive armor on shipboard and in a sea fight off Palermo in 1071, between the Normans and Saracens, the former hung their galleys with this material by way of a defensive cuirass. The Norman knights had probably adopted this device from their enemies, for felt had been used for some time for this purpose on board the huge "dromons" of the Saracens. These, the battleships of those days in the Mediterranean, usually rowed 50 oars a side, each oar being manned by two men, so that the size of the ships was evidently large. When the soldiers, sail trimmers and artificers who worked the war engines and siphons for Greek fire are added, it is evident that the crew must have been very large and have required a ship of considerable dimensions. These great warships were armored with woolen cloth soaked in vinegar to render it fireproof and hung with mantlets of red and yellow felt, so that their cuirass was not only useful, but ornamental as well. At this period and for many hundreds of years later additional protection was afforded to those on deck by the ranging of the bucklers and shields of the warriors on board along the gunwales. Later, in the 15th and 16th centuries, special "pavesades" or bulwarks, were provided in lieu, composed of large oblong shields, supplied for the purpose. In addition to felt, the time-honored leather armor also entered into the defensive panoply of the "dromons" and in the war of the Sicilian Vespers, Pedro III of Aragon covered two of the largest ships of his fleet with leather before sending it against Charles of Anjou. Conrad of Montferrat, at the siege of Tyre in 1187, either invented, or at all events, caused a special class of leather-protected vessels to be built, which were called barboats or duckbacks. They would now probably be called turtlebacks. They would appear to have been small craft covered with a strong leather-protected domed roof through portholes or openings in which the archers and crossbowmen could fire without exposing themselves. They proved very effective against the Saracens and in 1218 the entrance of the Nile was forced by 70 of these little armorclads.

It is said that the *Great Dromon* — whose capture by Richard Lion-Heart is still commemorated — was equipped with leaden armor. This was in 1191 and probably lead was occasionally used for protective purposes throughout the next two or three centuries, although there is no record of any ship so protected until 1530. In this year the Knights of Saint John, those sworn opponents of the Turk, built one or perhaps two leadclads. At any rate, one account says that they built such a ship in this year at Malta, while another describes a ship of this kind called the *Santa Anna,* launched at Nice in the same year. The *Santa Anna's* leaden armor plates were attached to her sides by bolts of brass and it was said for her that she could "resist the artillery of a whole army" and at the same time could sail or row as fast as any of her unarmored contemporaries. She was a big ship, with six decks, a reception saloon, a chapel, a specially constructed powder magazine and a bakery. She was present at the taking of Tunis in 1535 and played an important part in its capture. Lead was not infrequently used at this period for sheathing ships under water, in the same way that copper is still found so useful. Thus the French ship *Grande-Françoise,* launched in 1527, one of the largest and most famous ships of her day, was sheathed with lead from her keel to the first wale above her waterline.

The Spaniards attempted to protect their galleons of the Invincible Armada by building their exposed sides of exceeding thickness, but the heavy English guns "lashed them through and through." The first real ironclad ship was constructed in Antwerp in 1585, with a view of breaking through the lines of the Spanish army under Alexander of Parma, which was at that time closely investing the city. It was a large flat-bottomed craft, with a central casemate or battery built of thick balks of timber and plated with iron. It was intended to be and very likely was impenetrable to any artillery that the Spaniards could bring against it; and in hopeful anticipation that their ironclad ship would raise the siege and put an end to hostilities, the men of Antwerp christened her the *Finis Belli.* In addition to a heavy battery of guns, the *Finis Belli* carried a large body of musketeers, some of whom were stationed

aloft in her four fighting tops, while the rest were well protected by the loopholed bulwarks on the upper deck. Unluckily for the besieged Dutchmen, she ran aground before she reached her objective and fell into the hands of the Spaniards, who nicknamed her the *Coranjamula* or *Bogey*. They contrived to get her afloat and brought her down to the camp of Alexander of Parma, where she became a great attraction to the sightseers of the period. As for the Dutchmen in the doomed city, they henceforward only referred to their experiment as the *Perdita Expensæ* or *Wasted Money*. Ten years previous to this, others of the Dutch patriots had built a somewhat similar contrivance, which very possibly was also armored. This was the *Ark of Delft*, a twin-hulled vessel supporting a floating fortress, which was propelled by three hand-worked paddle-wheels placed between the two hulls.

It is interesting to note that if we go to the Far East we can find a parallel to almost any Western invention. It is, therefore, not astonishing to find that the Japanese possessed a paddle-propelled armorclad in the year 1600. This quaint craft, like the old leather-clad "barbotes" of the 12th century, was turtle-backed, with ports for the gunners. She was covered with iron and copper plates fitted together like the cells of a honeycomb, mounted 10 guns, and, like the *Ark of Delft*, was moved by a central paddle wheel. The British navy used various devices to protect its ships in the 18th century. According to a French writer the sailors of his country were astonished at the perfection to which the English had attained in this direction. "Old cables," he writes, "held in place by pieces of iron, barricaded the whole length of the bulwarks; mantlets of old rope hung over the ship's sides to diminish the shock of our cannon balls, and, beneath, a thick rope netting stretched from poop to bowsprit. The English fought under shelter, maneuvering without ceasing, out of musket range, so as to riddle our detachments of fusileers, with their cannon shot. So we lost 200 men for every 30 of the English put out of action."

This system of armoring was soon adopted by the French. The Spaniards endeavored to improve on this and in 1782 hoped great things from the celebrated floating batteries employed at the great siege of Gibraltar by the Duke de Crillon. The floating batteries were mounted on ships of the line, cut down to a uniform size. On the top they were defended by a covering made of cordage and wet hides. This was not the complete protection that was originally intended by the Chevalier d'Arcon, their constructor, according to another account of the same date as the above, which states that "the covering was to have been laid over with strong sheets of copper and by this means the redhot balls, the bombs and other destructive implements would have slid off."

The fate of these experimental armorclads offered no inducement to the naval constructors of the day to make further efforts in the direction of protection, so that till comparatively recent times we find sailors depending only on their "wooden walls" to resist the projectiles of the enemy. The oaken sides of the British ships, we may note in passing, were often exceptionally stout and difficult to penetrate. In the fight between the *Glatton*, 56-gun ship, and four French frigates, a brig and a cutter, mounting 220 guns between them, their 12- and 24-pounders failed to penetrate her sides and she beat them all off with great loss at the cost of one officer and one man wounded.

Americans, from the very commencement of their existence as a nation, set themselves to make improvements in naval warfare. David Bushnell constructed a practical submarine boat in 1773. Torpedoes were used by him and others in the war with England and for the purpose of towing these contrivances alongside the British ships, they invented and built in 1814 a paddle-propelled turtle-backed boat lying very low in the water and covered with "half-inch iron plates, not to be injured by shot." About the same period Robert Fulton (q.v.), who had already constructed one or two submarine boats and various classes of torpedoes, built a steam frigate which he called the *Demologos*, or *Voice of the People*, but which is sometimes known as the *Fulton I*. This, the first steam warship ever constructed, had her sides no less than 13 feet thick of alternate layers of oak and ash wood, a thickness impenetrable by shot from any gun then afloat. In 1829 this vessel was blown up by accident and was succeeded in the American navy by the *Fulton II*, a ship which appears to have been protected by some kind of iron armor.

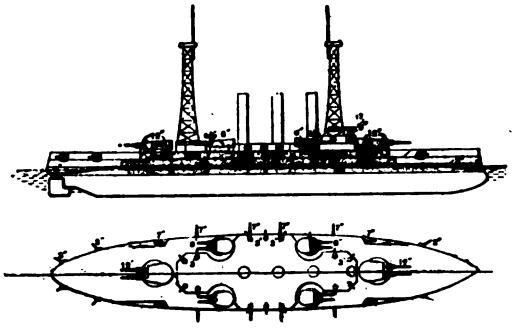
Various proposals were made to use iron plating to protect the sides of ships of war from this time forward, but until the French constructed a number of armor-plated batteries for use in the Crimean War, nothing practical came of the suggestions of inventors. Their success at the bombardment of Kinburn demonstrated the value of armor plating. England at once followed with others of the same kind, some of which are still preserved as relics. Then came the French *La Gloire*, the British *Warrior*, the iron clads and monitors of the American war and henceforward the steady evolution of the armored fighting ship, which has provided us with the majestic battleships of the present day.

WARSHIPS, Modern. The consideration of so comprehensive a subject as Modern Warships must necessarily be confined to the salient features of the principal classes of such vessels. These features are best illustrated by tables giving the principal particulars of the most important individual designs, with supplemental information in the form of outline plans, giving profiles and battery arrangement; also, in some cases, supplemented by photographs of the completed vessel. Before giving and commenting on such definite data, however, it may be well to give general consideration to the development of the principal types of war vessels in two of the most important navies. In an article of this character, consideration must necessarily be confined to fighting vessels, since the article would extend to quite an undue length if more than allusion were made to auxiliary naval vessels. This, in no sense, implies lack of appreciation of the very important service performed by auxiliary vessels. In fact, the mere enumeration of the names of the principal types of vessels employed as fleet auxiliaries tells its own story. Supply vessels, fuel ships, hospital ships, ammunition ships, repair ships, distilling ships, destroyer tenders, submarine tenders, trans-

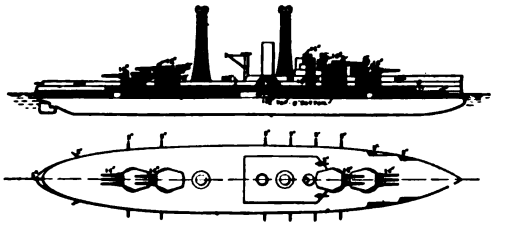
ports, etc., are vital to the efficiency of the active fleet, and their names indicate clearly the very tremendous part necessarily played by vessels of this character in all naval operations. Moreover, in order to reduce the article to reasonable proportions, consideration will be largely confined to battleships, battle cruisers, light or scout cruisers, destroyers, submarines, submarine chasers and monitors. While the World War did not afford an opportunity to try out satisfactorily all of the types of vessels above enumerated, some of them were afforded unusual opportunities for demonstrating their offensive and defensive qualities.

of warships in many phases of naval warfare. It cannot be said that the views which prevailed prior to the Great War with respect to the general type and characteristics of modern warships and the special advantages of each type have undergone any radical change. The battleship still remains the backbone of an offensive navy, and a navy capable of effective offense is the only navy worthy of consideration by any great power whose maritime interests are of commanding importance. The battleship, however, for its most effective employment, requires other types of war vessel in close cooperation. The experience of the Great War

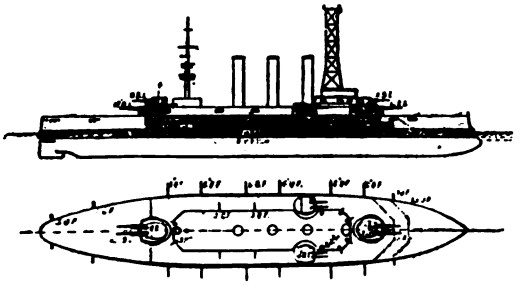
UNITED STATES BATTLESHIPS.



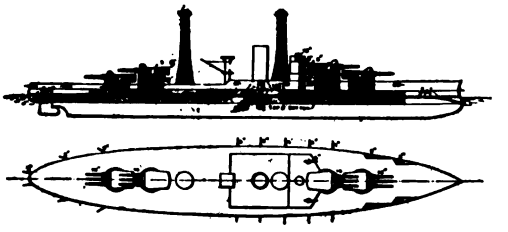
Connecticut Class — Length 450 ft.; 16,000 tons; speed 18.1 to 18.8 knots; armament 4–12 in., 8–8 in., secondary armament changed and AA. guns added. Connecticut and Louisiana have 11-inch belt tapering to 9 inches instead of uniform 9-inch and have only 2–3-inch guns at the stern. New Hampshire has two military masts in place of the towers. Minnesota has one mast and one tower. New Hampshire has 11-inch barbetts for 12-inch turrets instead of 10-inch as in rest of class.



Nevada Class — Length 575 ft.; 27,500 tons; speed 20.5 knots; armament 10–14 in., there are now 12-5 in., and 2–3 in. AA. Completed 1915.



Georgia Class — Length 435 ft.; 14,948 tons; speed 19 to 19.4 knots; armament 4–12 in., 8–8 in., secondary armament changed and AA. guns added. Completed 1906–1907.

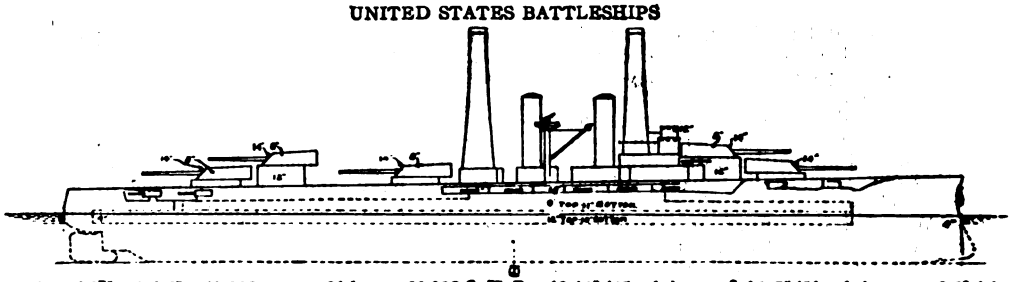


Pennsylvania Class.— Length 600 ft.; 31,400 tons; speed 21 knots; armament 12–14 in., 14–5 in., are now mounted with 4–3 in. AA. Completed 1916–1919.

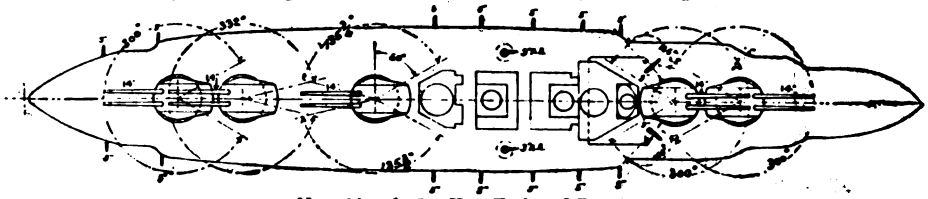
It is not the province of an article of this character to go into the subject of the vital importance of a navy for countries with extensive coast lines, and especially where such countries are necessarily dependent upon imports for their vital necessities. Mahan and many other able naval strategists and historians have dealt with this subject in a most complete and adequate manner. Were further exposition of the vital necessity of a navy required, however, the history of the Great War would, in itself, furnish all the argument necessary. While engagements between capital vessels were not frequent and the technical information which might have been obtained from such actions is not as complete as might be desired, rich experience was obtained from the behavior

has proved this most conclusively, even if such additional proof were desired. To refer to one instance only, the great development in design and use of the submarine has necessitated a correspondingly effective development in battle cruisers, scout cruisers and destroyers. In the presence of submarines or with a possibility of encountering submarines, no battleship fleet would be reasonably secure without an enveloping screen of destroyers. To meet the development of submarine vessels and to counteract the mining of large areas of the open sea, mine sweepers and mine layers had to be provided in large numbers. To obtain suitable information concerning enemy movements and to meet all the requirements of such exacting duty, not only light cruisers and scout cruisers, but the great-

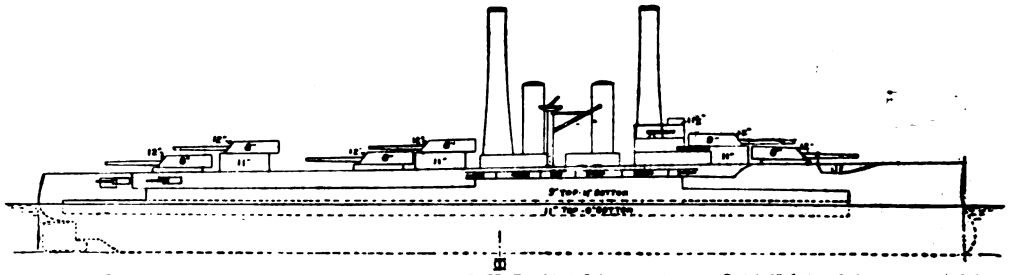
UNITED STATES BATTLESHIPS



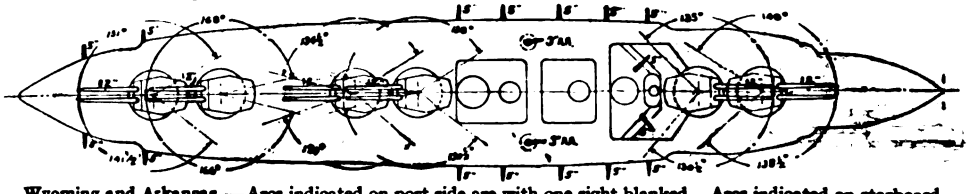
565′ × 95′-2½″ × 28′-6″ × 27,000, tons. 21 knots, 32,000 S. H. P. 10-14″ (45 cals.) guns & 16-5″ (51 cals.) guns. 2-3″ AA. Muzzle energy of one 14″ gun, 65,606 foot tons; Muzzle energy of one 5″ gun, 3,439 foot tons.



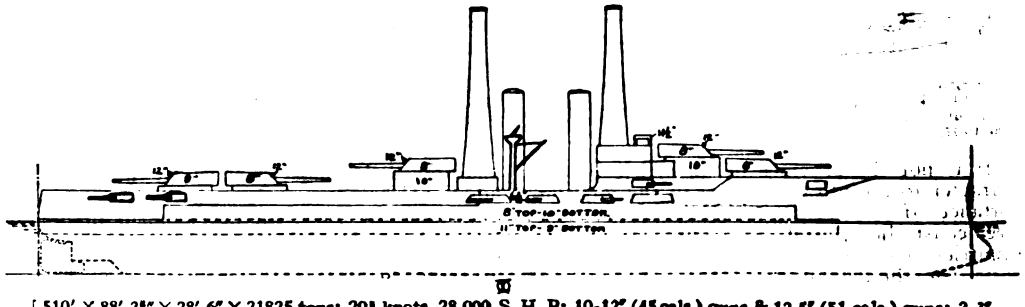
Nos. 34 and 35 — New York and Texas.



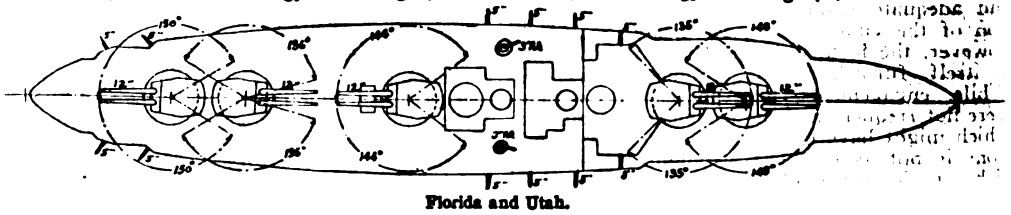
554′ × 93′-2½″ × 28′-6″ × 26,000 tons; 20½ knots, 26,000 S. H. P; 12-12″ (50 cals.) guns & 16-5″ (51 cals.) guns. 2-3″ AA. Muzzle energy of one 12″ gun, 60,700 foot tons; muzzle energy of one 5″ gun, 3,439 foot tons.



Wyoming and Arkansas. — Arcs indicated on port side are with one sight blanked. Arcs indicated on starboard side are with both sights clear.

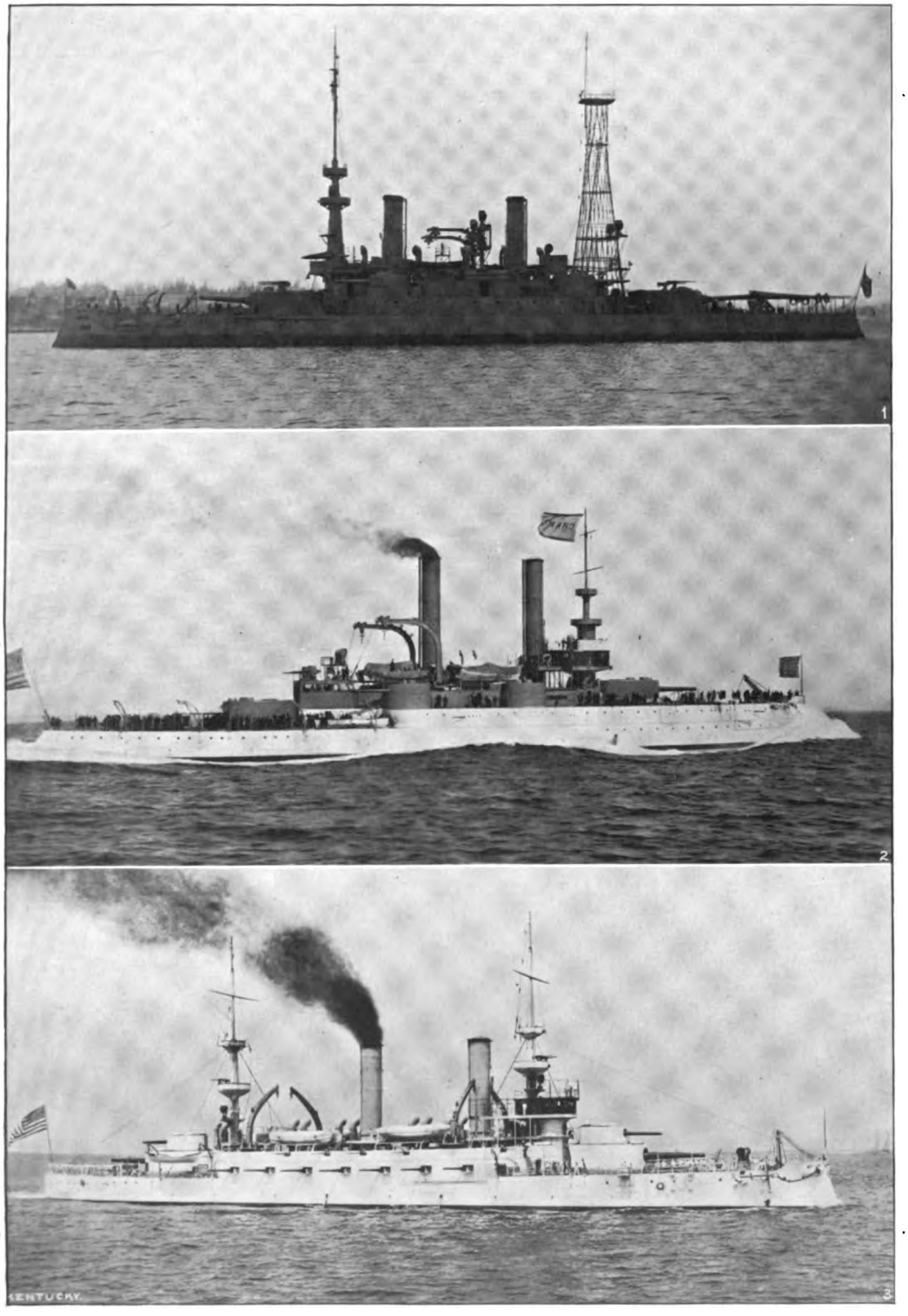


510′ × 88′-2½″ × 28′-6″ × 21825 tons; 20½ knots, 28,000 S. H. P; 10-12″ (45 cals.) guns & 12-5″ (51 cals.) guns; 2-3″ (50 cals.) A. A. Muzzle energy of one 12″ gun, 48,984 foot tons; muzzle energy of one 5″ gun, 3,439 foot tons.



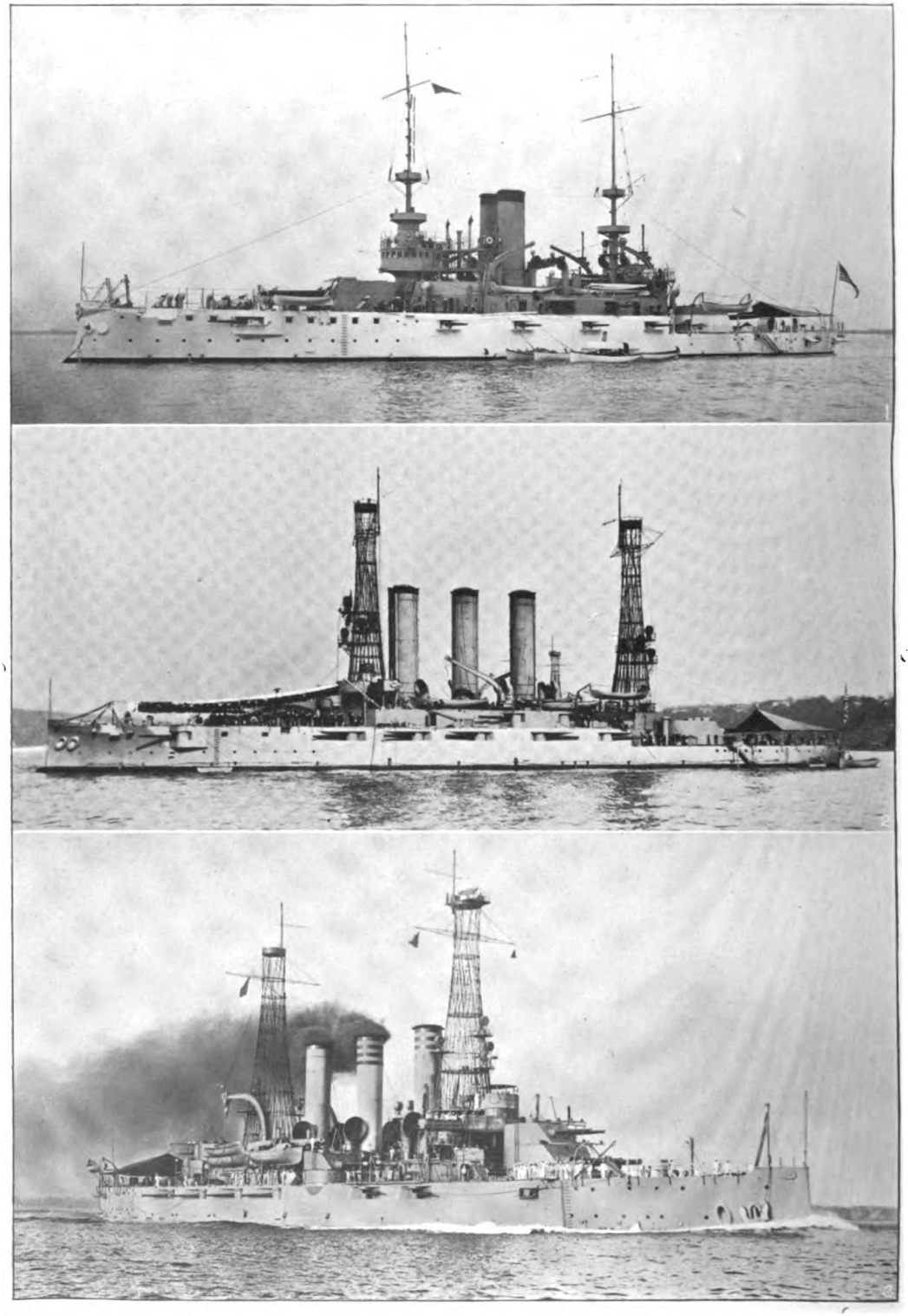
Florida and Utah.

MODERN WARSHIPS



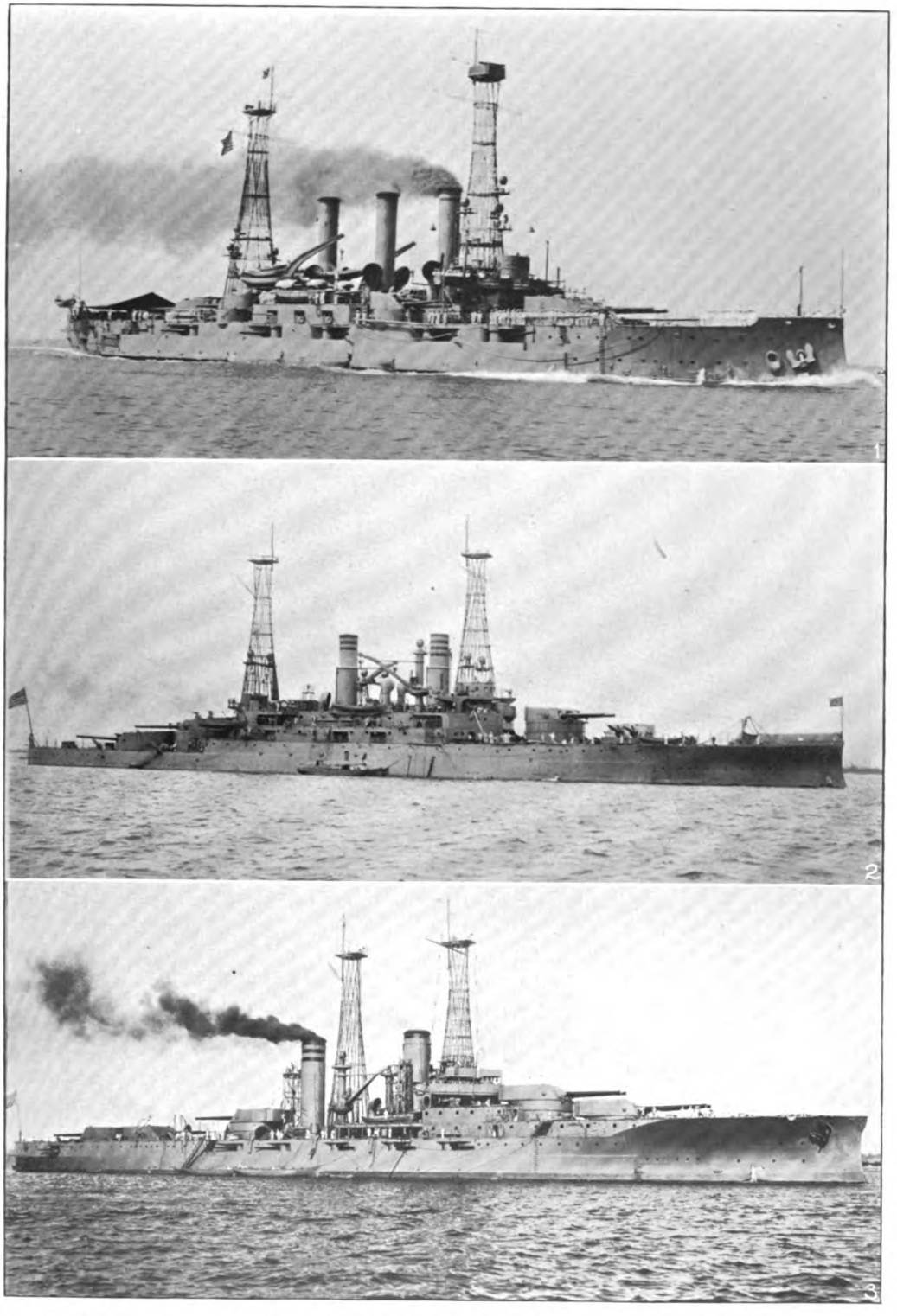
1 U. S. S. Oregon representing Indiana, Massachusetts and Oregon
2 U. S. S. Iowa
3 U. S. S. Kentucky representing Kearsarge and Kentucky

MODERN WARSHIPS

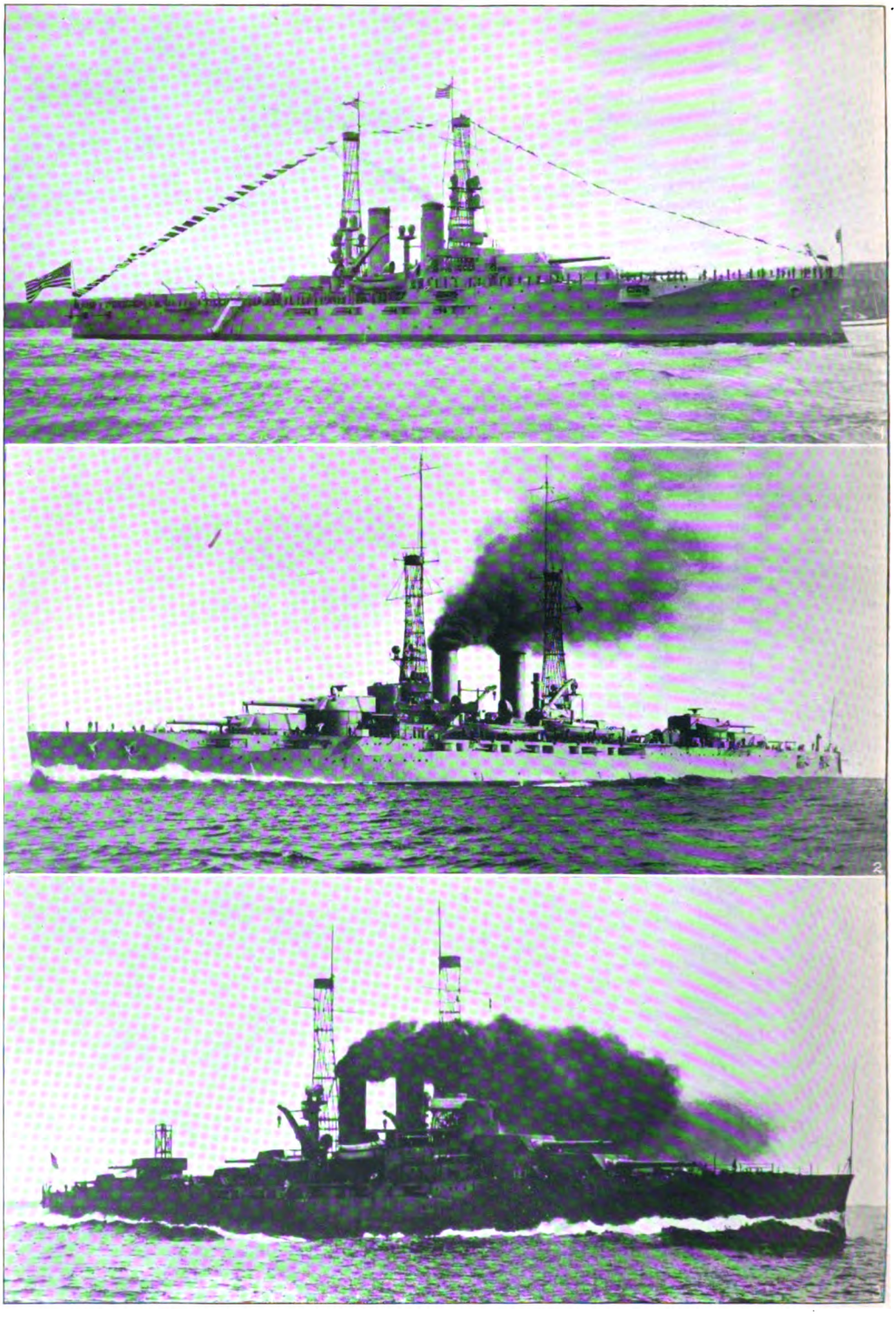


1 U. S. S. Alabama representing Alabama, Illinois and Wisconsin
2 U. S. S. Maine representing Maine, Missouri and Ohio
3 U. S. S. Virginia representing Virginia, Georgia, Nebraska, New Jersey and Rhode Island

MODERN WARSHIPS

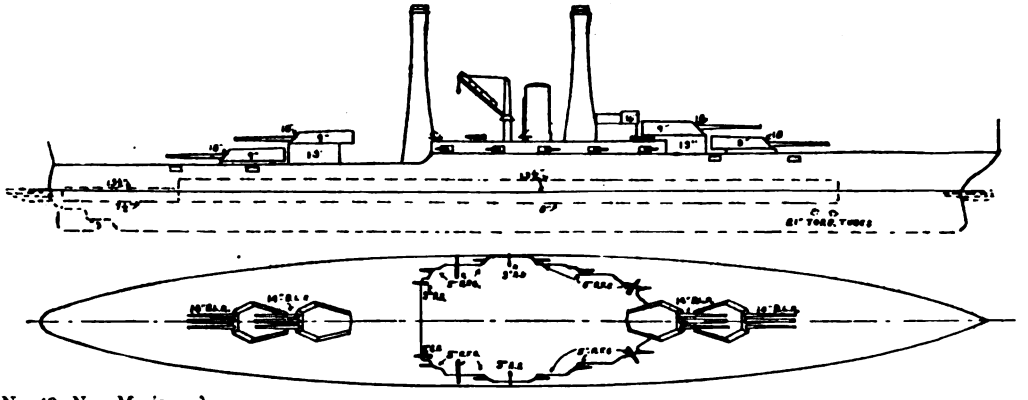


1 U. S. S. Louisiana representing Connecticut, Louisiana, Kansas, Minnesota, New Hampshire and Vermont
2 U. S. S. Michigan representing South Carolina and Michigan
3 U. S. S. North Dakota representing Delaware and North Dakota



1 U. S. S. Florida representing Florida and Utah 2 U. S. S. New York representing New York and Texas
3 U. S. S. Arkansas representing Arkansas and Wyoming

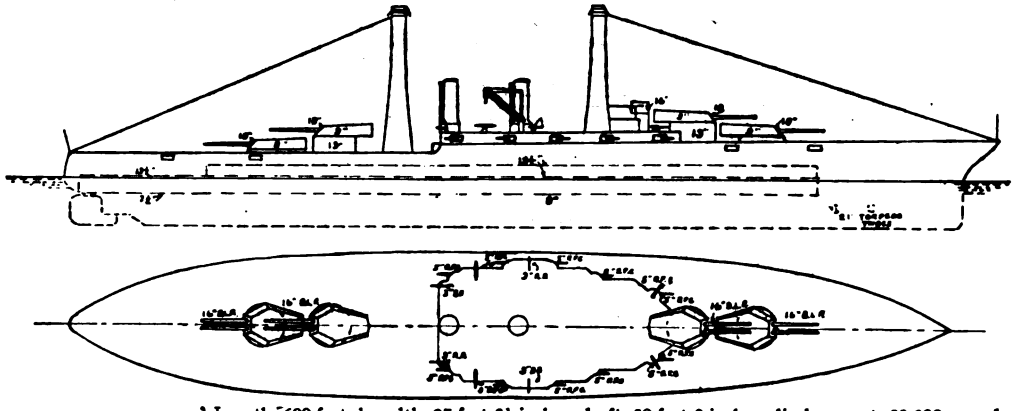
UNITED STATES BATTLESHIPS



No. 40. New Mexico
41. Mississippi
42. Idaho

Length, 600 feet; breadth, 97 feet 4½ inches; draft, 30 feet; displacement, 32,000; speed, 21 knots.
Armament, 12–14", 14–5", 4–3" AA.

Muzzle energy of one 14 inch gun = 76,087 ft. tons
Muzzle energy of one 5 inch gun = 3,439 ft. tons



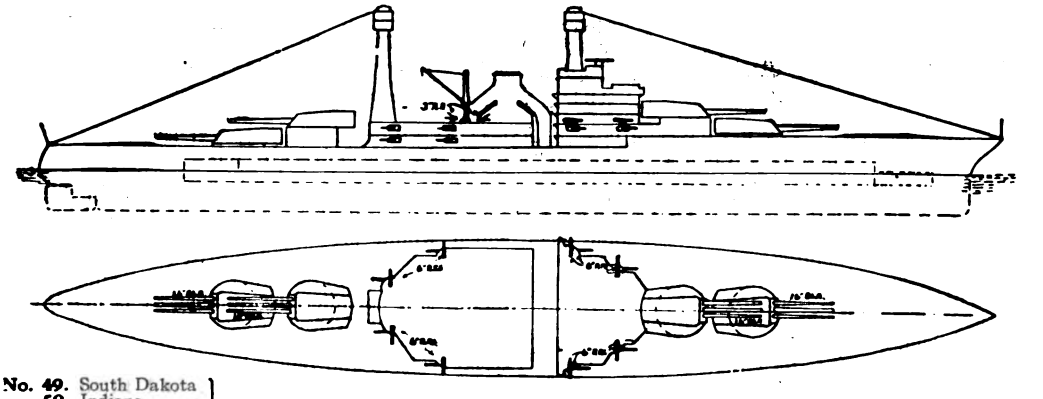
No. 43. Tennessee
44. California

Length, 600 feet; breadth, 97 feet 3½ inches; draft, 30 feet 3 inches; displacement, 32,300; speed, 21 knots. Armament 12–14", 14–5", 4–3" AA.
Tennessee and California have three 14 inch guns per turret.

45. Colorado
46. Maryland
47. Washington
48. West Virginia

Length, 600 feet; breadth, 97 feet 3½ inches; draft, 30 feet 6 inches; displacement, 32,600; speed, 21 knots.
Armament 8–16", 14–5", 4–3" AA.

Muzzle energy of one 16 inch gun = 98,406 ft. tons
Muzzle energy of one 14 inch gun = 76,087 ft. tons
Muzzle energy of one 5 inch gun = 3,439 ft. tons

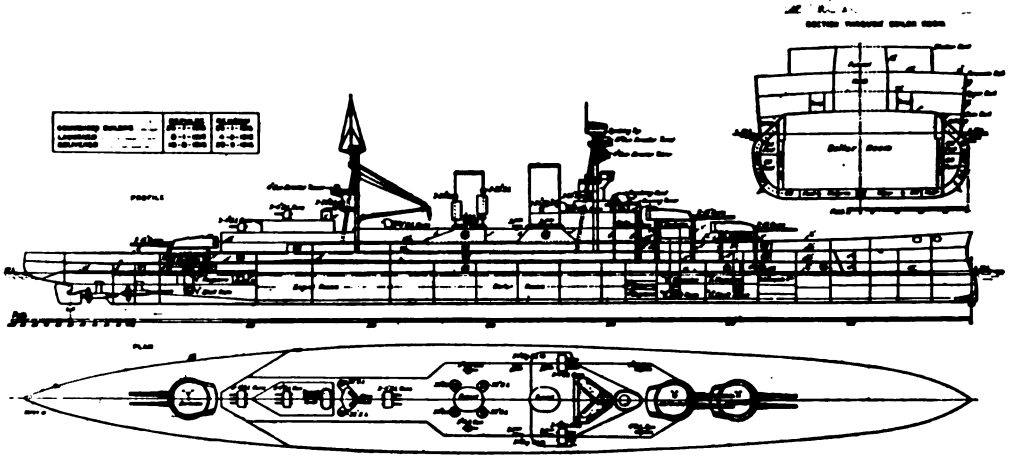


No. 49. South Dakota
50. Indiana
51. Montana
52. North Carolina
53. Iowa
54. Massachusetts

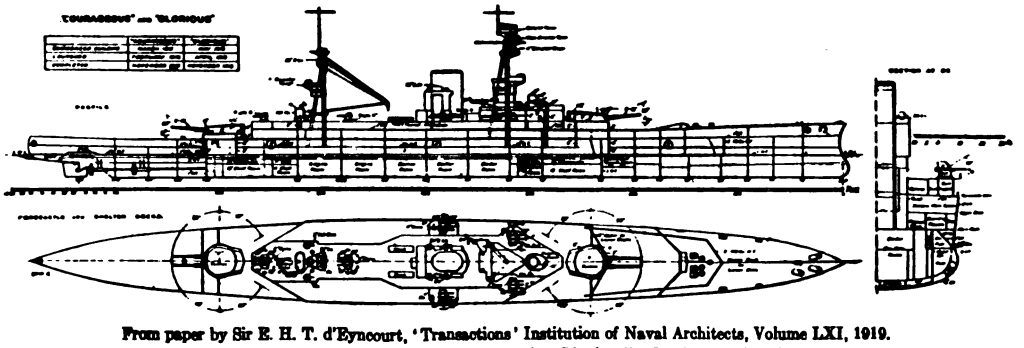
Length, 660 feet; breadth, 104 feet 9 inches; draft, 33 feet; displacement, 43,200; speed, 23 knots.
Armament, 12–16"; 16–6"; 4–3" AA.

Muzzle energy of one 16 inch gun = 114,130 ft. tons
Muzzle energy of one 6 inch gun = 6,550 ft. tons

est development of this type — battle cruisers — must be provided. In this connection, it is of interest to note that, in an earlier stage of naval development, scout cruisers and light cruisers were intended to prey upon enemy commerce. This resulted gradually in the development of the armored cruiser type which, in its turn, gave way to the battle cruiser type, which now has possibilities far in excess of those involved in the original idea of preying upon enemy commerce. This type has, in fact, duties of the highest importance in co-operation with the battleship fleet, and is even capable of doing its full share when in actual contact with enemy battleships. The high speeds desired for *battleships* and the high degree of armored protection required for *battle cruisers* tended, toward the close of the Great War, to cause some authorities to recommend merging these two types into one. It is still the opinion of eminent naval authorities, however, that, for highest efficiency, the battleship and the battle cruiser must be kept distinct.



From paper by Sir E. H. T. d'Eyncourt, 'Transactions' Institution of Naval Architects, Volume LXI, 1919.
British Battle Cruisers "Repulse" (1916) and "Renown" (1916).



From paper by Sir E. H. T. d'Eyncourt, 'Transactions' Institution of Naval Architects, Volume LXI, 1919.
British Battle Cruisers "Courageous" and "Glorius." Both completed 1916.

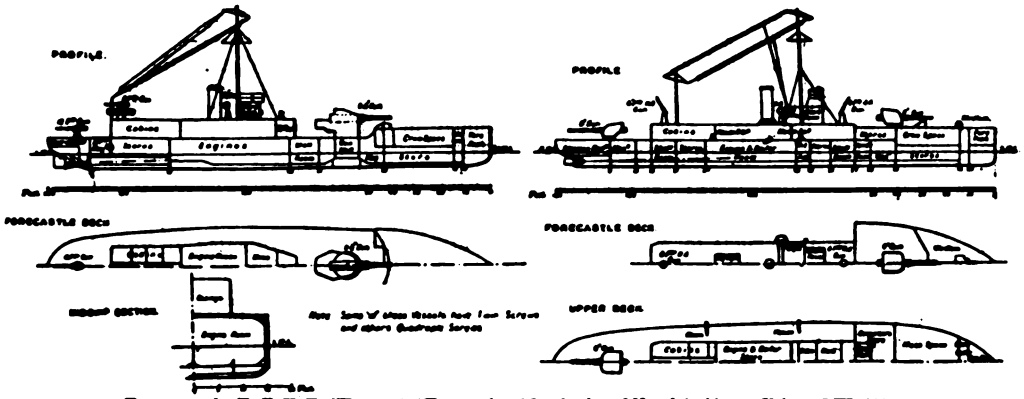
The exigencies of the Great War developed two other types of cruiser which had not heretofore existed. These were the high speed, heavily armed light cruiser of the British *Glorious* type, and the aircraft carrier, of the *Furious* type. The *Glorious* class carried as main armament what, a few years ago, would have been considered an immense battery even for a battleship, namely, four 15-inch guns. These vessels were designed especially for action against less heavily armed enemy craft, and yet their great battery power and high speed permitted them to run the risk of an encounter with battleships less heavily armed, with a good chance of inflicting heavy damage at ranges which would enable them to escape serious punishment themselves. In the event of meeting vessels of equal battery power, their great speed permitted them to avoid action.

The very important part taken by aircraft in the Great War in scouting, bombing and range finding necessitated the provision of a special type of vessel to carry such craft in large quantities, with special deck arrangements which would permit their taking flight from and alighting on board ship at sea under all normal conditions of weather. To provide such facilities, a considerable number of large, high speed merchant vessels were converted into aircraft carriers, and the *Furious* and other high speed cruisers and one large battleship were rearranged prior to completion and fitted with long, upper, flush decks and other arrangements necessitated by their service as aircraft carriers. The provision of upper decks of great area and without obstructions necessitated very unusual arrangements of smoke pipes, ventila-

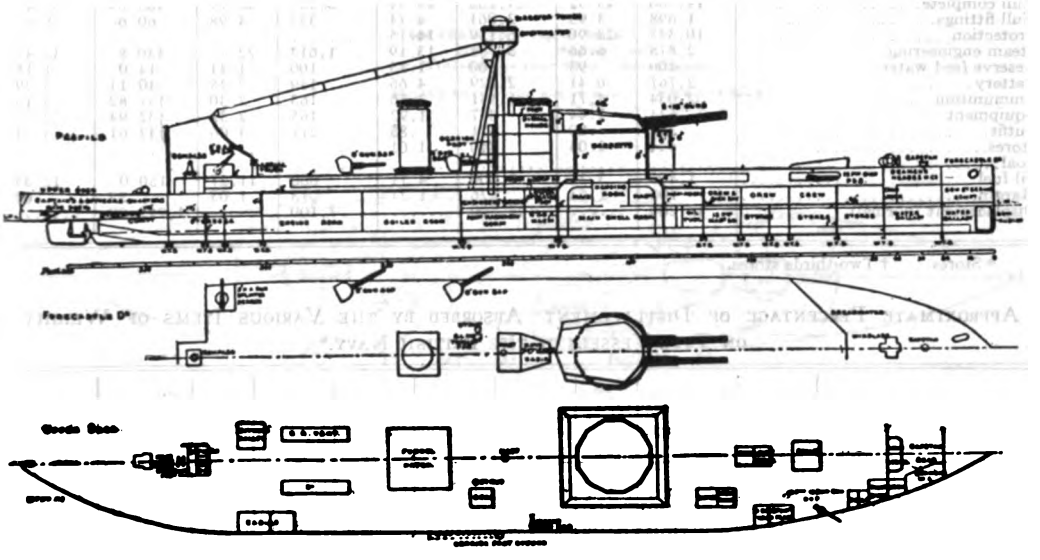
tors and other features which, in ships of ordinary design, are carried well above deck. In these vessels they are carried long distances under the upper deck and out to the sides of the ship. The exigencies of naval operations during the Great War also necessitated a great development in destroyers, submarines, submarine chasers and monitors, all of which will be commented upon at greater length under their appropriate headings.

for new naval construction to an extent represented by a total of more than $1,200,000,000.

Distribution of Weights.—One of the most important and controlling elements in warship design is the proportion of the total displacement of the vessel which may be devoted to the vital offensive and defensive characteristics. It goes without saying that the size and form of the hull is largely controlled by the battery and protection to be provided, the



From paper by Sir R. H. T. d'Eyncourt, 'Transactions' Institution of Naval Architects, Volume LXI, 1919
9.2" Monitors (M15 to 28) 6" Monitors (M29 to 33)



From paper by Sir R. H. T. d'Eyncourt, 'Transactions' Institution of Naval Architects, Volume LXI, 1919.
Monitors "Erebus" and "Terror" (15" guns)

In a word, the development of modern warships received an unparalleled stimulus during the Great War, and perhaps nothing could emphasize this development in more effective terms than the mere recital of the fact that authoritative reports indicate that the British government appropriated, in the development of the British navy, between £250,000,000 and £300,000,000 sterling for warship construction during the period subsequent to August 1914, while the Congress of the United States, subsequent to February 1917, made authorization

speed to be attained and the radius of action at maximum speed and most economical speed. Adequate strength of hull structure and good seagoing characteristics must, in the nature of things, be given priority over all other elements. The development of the other vital characteristics is, therefore, subordinate to adequate strength of structure and seaworthiness. The attainment of high speed is especially dependent upon form of hull. With given dimensions, large radius of action necessarily reduces the amount of space which can be

devoted to armor, armament, propelling machinery and other important elements. The converse is also true. All warship design is, therefore, in the nature of a compromise. If any given design produces an unusual development in any one of the major characteristics above enumerated, it may be taken for granted that others must suffer a corresponding diminution. These conclusions are, in fact, the direct result of immutable physical laws, and no designer, however skilful, can run counter to these laws. The element in which efficiency of manufacture and design can be shown most clearly is dependent upon material and necessitates specifying and obtaining a very high grade and so distributing it as to produce the best results with the least expenditure of weight. Reduction in weight is, therefore, possible in both hull and machinery designs, particularly through skilful distribution of the highest class of material. In machinery design, reduction of weight is also possible by improvement in the design of propelling machinery and auxiliaries. In armor and armament, the possibilities of reduction in weight are rather more limited, although improvements have steadily been made in this direction. Given, however, the same skill in design in all the elements of a warship, the proposition enunciated in the beginning of this section is practically axiomatic; namely, over-development of any vital element of warship design can only be effected at the expense of other elements of the design. As indicating the general distribution of displacement required for the principal elements of modern vessels of war, there are given below two tables. The first gives a tabulation of approximate weights for various recent type vessels of the United States navy. The second gives the approximate weight and percentage of displacement absorbed by the various principal elements embodied in recent type vessels of the British navy:

UNITED STATES NAVAL VESSELS.

TABULATION OF WEIGHTS.

Percentage of Weight to Normal Displacement. (Based on Estimated Weights).

ITEMS	Battleships 49–54		Battle cruisers 1–6		Scout cruisers Nos. 4 to 13		Destroyers (186 class)	
	Wt. (tons)	Per cent	Wt. (tons)	Per cent	Wt. (tons)	Per cent	Wt. (tons)	Per cent
Hull complete	19,580	45.32	21,288	48.94	3,459	48.71	405.89	33.42
Hull fittings	1,698	3.93	2,061	4.74	352	4.98	60.6	5.02
Protection	10,325	23.90	6,159	14.15	.....	.....	.....	.....
Steam engineering	2,878	6.66	5,738	13.19	1,612	22.7	430.8	35.47
Reserve feed water	400	.93	500	1.15	100	1.41	14.0	1.15
Battery	2,767	6.41	2,029	4.66	159	2.25	40.11	3.29
Ammunition	2,034	4.71	1,551	3.56	163	2.30	†37.82	3.13
Equipment	624	1.44	837	1.92	165	2.32	†32.94	2.72
Outfit	347	.80	371	.85	*217	3.06	†42.61	3.54
Stores	444	1.03	440	1.01	.....	.....	.....	.....
Coal	.....	.....	.....	.....	.....	.....	.....	.....
Oil fuel	1,400	3.24	2,000	4.71	800	11.27	150.0	12.35
Margin	702	1.63	526	1.21	73	1.03	.23	.02
Displacement (normal)	43,200	.....	43,500	.....	7,100	.....	1,215.00	.....

* Stores. † Two-thirds stores.

APPROXIMATE PERCENTAGE OF DISPLACEMENT ABSORBED BY THE VARIOUS ITEMS OF WEIGHT ON TYPE VESSELS OF THE BRITISH NAVY.*

ITEMS	Queen Elizabeth	Iron Duke and Royal Sovereign	Tiger	Renown	Courageous	Light cruisers	T.B.D.	"P" boats	Sloops and sweepers	Erebus (monitor)
Equipment	3.0	3.0	3.0	2.5	3.5	6.0	4.5	6.0	8.0	4.5
Armament	16.5	18.0	12.5	12.5	12.0	5.5	4.0	2.5	2.0	14.5
Machinery	14.5	10.0	21.0	21.0	16.0	22.0	35.0	35.0	25.0	9.0
Fuel†	2.5	3.5	3.0	3.5	4.0	7.5	15.0	9.0	15.0	3.0
Armor and protection‡	31.0	32.0	27.0	21.5	18.5	8.5	.....	....	.....	26.0
Hull	32.5	33.5	34.5	39.0	46.0	51.0	41.5	48.0	50.0	43.0

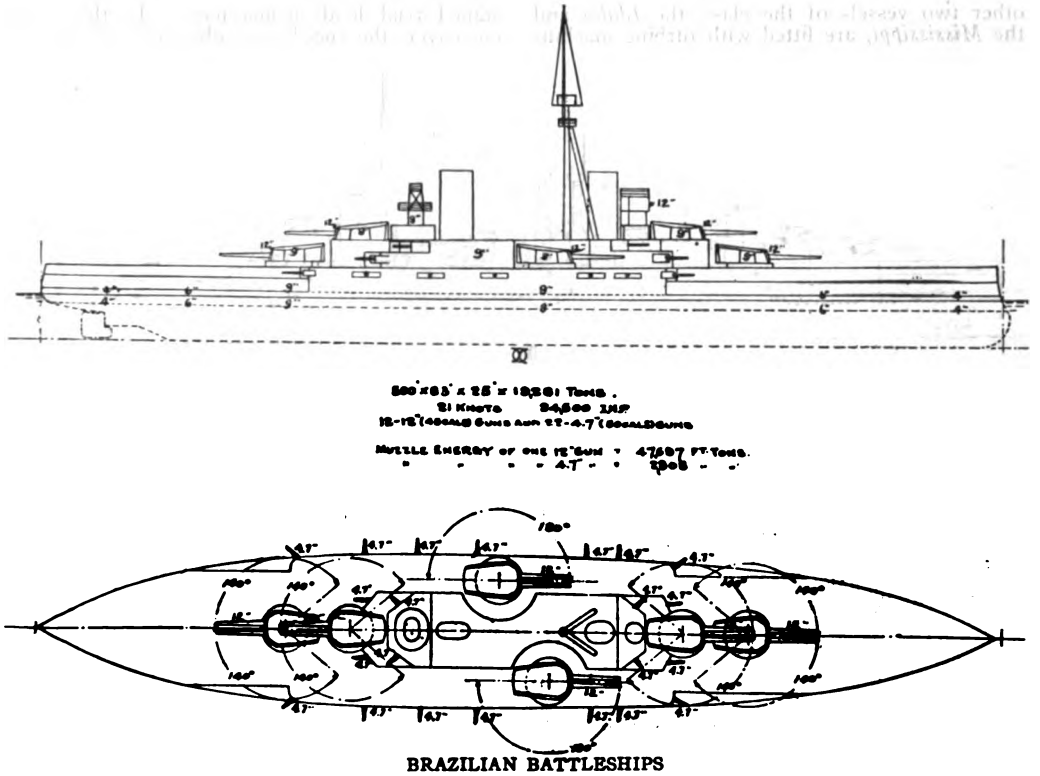
* From paper by Sir E. H. T. d'Eyncourt, published in 'Transactions' of Institution of Naval Architects (Vol. LXI, 1919).

†The percentage of fuel is much greater and all other percentages correspondingly less for the vessels in their fully loaded or deep condition.

‡ A considerable portion of the structure forming the hull is required to be of such thickness for strength in the large vessels given above, that it is useful for protection, in which it might reasonably be included.

The foregoing tables are obviously not directly comparable, since the grouping of the weights for British vessels is not the same as that for United States vessels. It will be noted that, in the table of British weights, all weights are grouped under six headings, while, in the table for United States vessels, they are given under 13 headings. It may be noted also that,

in the table for United States vessels, the hull weights include protective deck, while, in the British table, the protective deck is apparently included under the heading "armor and protection." In the same manner, it will be observed that armament in the British table undoubtedly includes ammunition. Moreover, the types of armored vessels, while of the same general description, vary in many particulars. The tables must, therefore, be taken as applicable only to the particular types of vessels noted, but they have special interests as indicating the distribution of the weights allotted to the major elements of design in the most recently designed vessels of the two largest navies, and they indicate in the most convincing way how over-development of one element must necessarily be reflected in a reduction of some other element or elements.

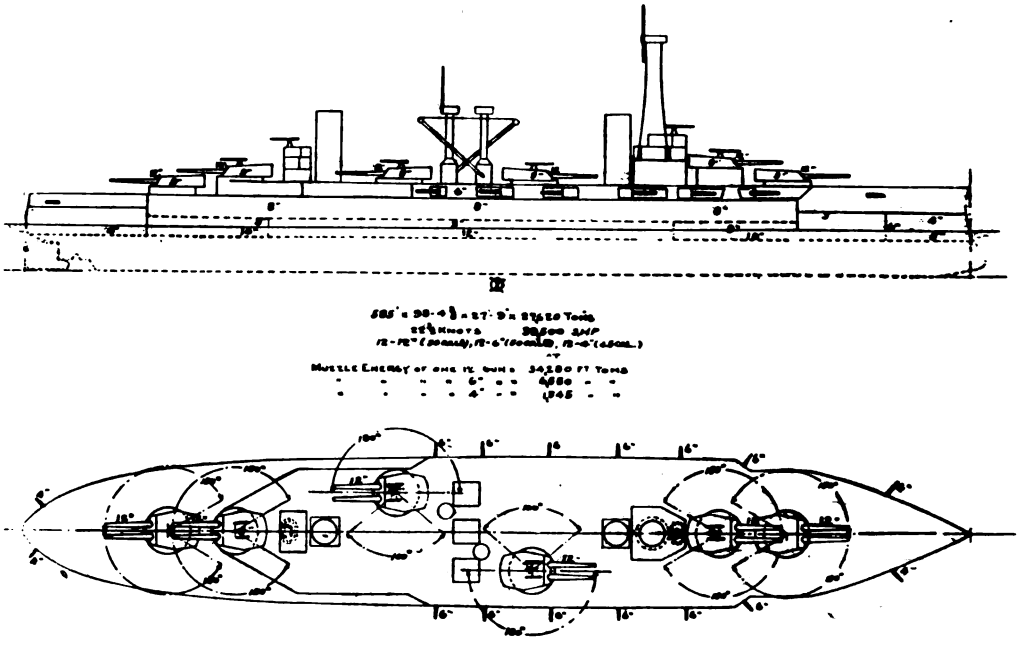


BRAZILIAN BATTLESHIPS
Minas Geraes — Sao Paulo — Rio de Janeiro

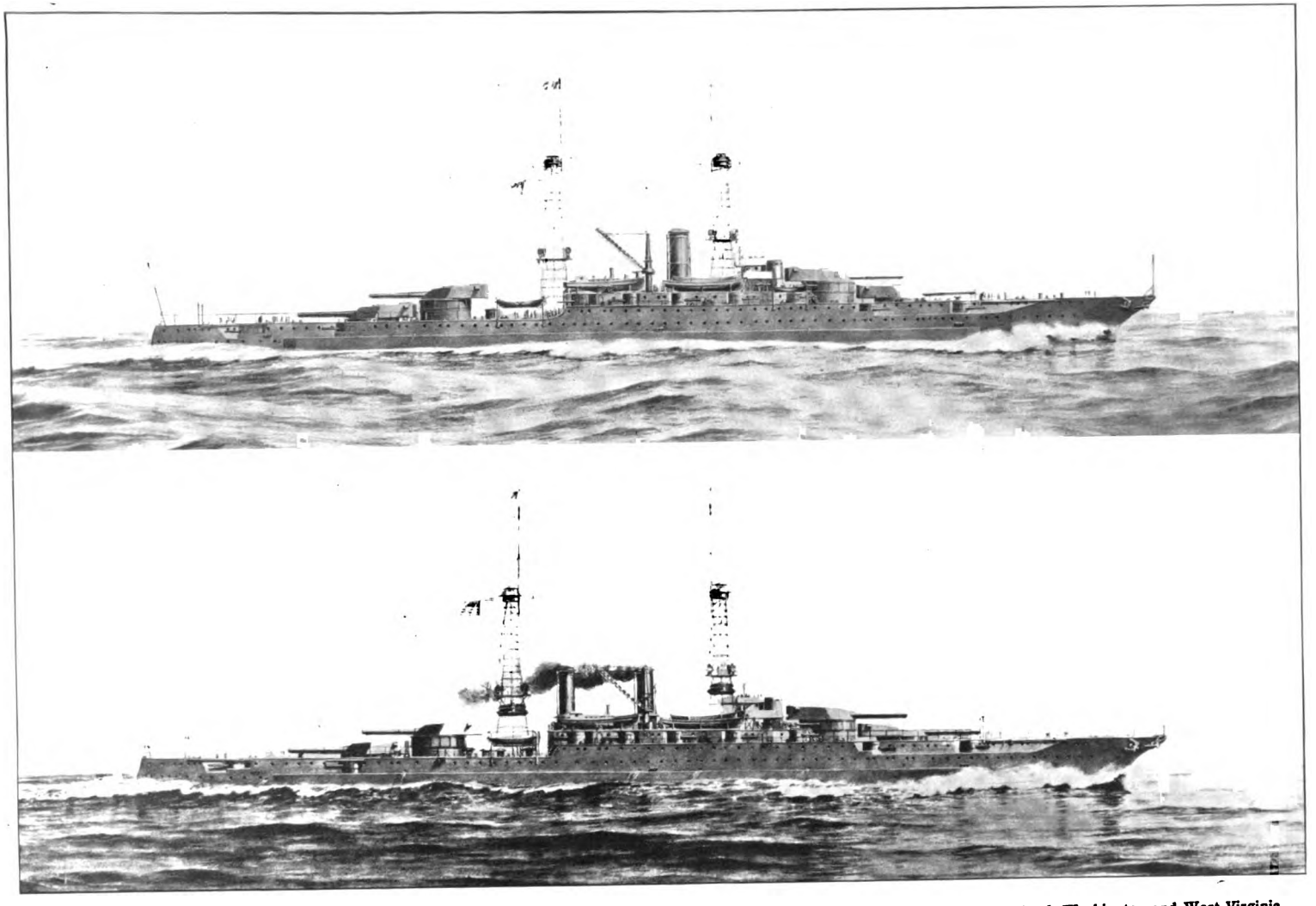
Propelling Machinery.— The developments in propelling machinery are treated elsewhere in articles dealing with that and allied subjects, so that little more than allusion thereto would seem appropriate at this time. To those who are responsible for the designs of modern warships, however, it is well known that improvements in propelling machinery make possible great improvements in the general efficiency of design of all warships. It is of interest to note, at the outset, that it is only in comparatively recent years that the transition from reciprocating engines to turbine-driven propelling machinery has had full acceptance. In the earlier stages of turbine development, much opposition was expressed by the proponents of reciprocating machinery. With the increasing efficiency of turbine propulsion, however, this opposition has practically disappeared, and the manifold advantages due to turbine installations in warships are such that, for that class of vessels, turbine machinery has largely superseded the reciprocating engine. The introduction of the gear drive instead of direct-acting turbines has had much to do with the increasing favor with which turbine propulsion has been regarded. The introduction of the gear drive has permitted a reduction in the revolutions of the screw and the use of greater blade areas with smaller number of revolutions of propellers. This has contributed greatly to the efficiency of this type of propulsive mechanism. There is also now being steadily developed the internal combustion engine. This type of propelling machinery has not, however, had extensive use in naval vessels, other than submarines. On the other hand, the use of electrically-driven propelling machinery has made rapid advances, even for installation on capital ships. This advance has been so notable that it seems appropriate to refer in greater detail to the results obtained through the installation of this type of propelling machinery on one of the most recently built battleships of the United States navy and its prospective installation on the very latest battleships and battle cruisers designed for that navy. So far as known, practical use of the electric drive for the main propelling machinery

of capital ships has not been made in navies other than that of the United States up to the present time, although this type of machinery is, of course, under consideration. In the United States navy, however, its installation has been attended with conspicuous success. It was first tried on a large scale on the naval collier *Jupiter*. After most exhaustive tests on this vessel, this type of propelling machinery was further developed and, after the most thorough consideration, was finally adopted for the battleship *New Mexico*. The *New Mexico* is one of the most recently constructed battleships of the United States navy, and is one of a group of three vessels of about 32,000 tons designed load displacement. The other two vessels of the class, the *Idaho* and the *Mississippi*, are fitted with turbine machinery. The structural arrangements adopted for the two sister vessels remain practically unaltered on the *New Mexico*, so that one of the particular advantages of the electric drive did not show to its fullest extent in this particular installation. The *New Mexico* had her dock trials 18 and 19 July 1918, and on 15 August put to sea for her official trials. This trial was conducted under decided disadvantages. The crew was new to the ship, and the ship was only a short time out of the hands of the builders. Nevertheless, the machinery soon developed its maximum power with ease and without accident of any character to the electric part of the machinery, in spite of the fact that the crew was inexperienced and that none of them, with the exception of a few officers and men, had ever before been associated with this type of machinery. It should be noted that the penalty contract weight for the propelling machinery, including all necessary auxiliaries, was 700 tons. The actual weight as installed was only 600 tons. Moreover, the actual weight of the main propelling machinery, exclusive of auxiliaries and spares, was nearly 215 tons less than the weight of corresponding machinery of the turbine-driven sister ship *Mississippi*.

The *New Mexico* was designed for a speed of 21 knots, with 26,400 shaft horse-power. The electric motors not only met the contract requirements, but, on the four-hour full speed run, permitted an average speed of 21.08 knots per hour to be maintained on a total shaft horse power of 31,200. This result was accomplished in spite of the fact that the vessel had extra fuel, stores, etc., on board, making her displacement 800 tons in excess of the designed trial load displacement. In this case, moreover, the speed was adversely affected by the paravanes, which were not contemplated in the original design and allowance for which was not made in determining the original designed speed of 21 knots. Many advantages are claimed for the electric type of propulsion from the point of view of economy of operation, flexibility of control and adaptability of installation. This last-named quality is of particular advantage in permitting increased protection to be given to all vital portions of the machinery spaces of battleships. In this respect, it has apparently great advantages over any other type of propelling machinery. While, as already stated, the space actually occupied by the machinery on the *New Mexico* is practically the same as that occupied by the turbine machinery on the sister ships *Mississippi* and *Idaho*, this fact is due rather to a similar arrangement of machinery spaces having been adopted in the original design of all these vessels. It is, however, a fact that the installa-

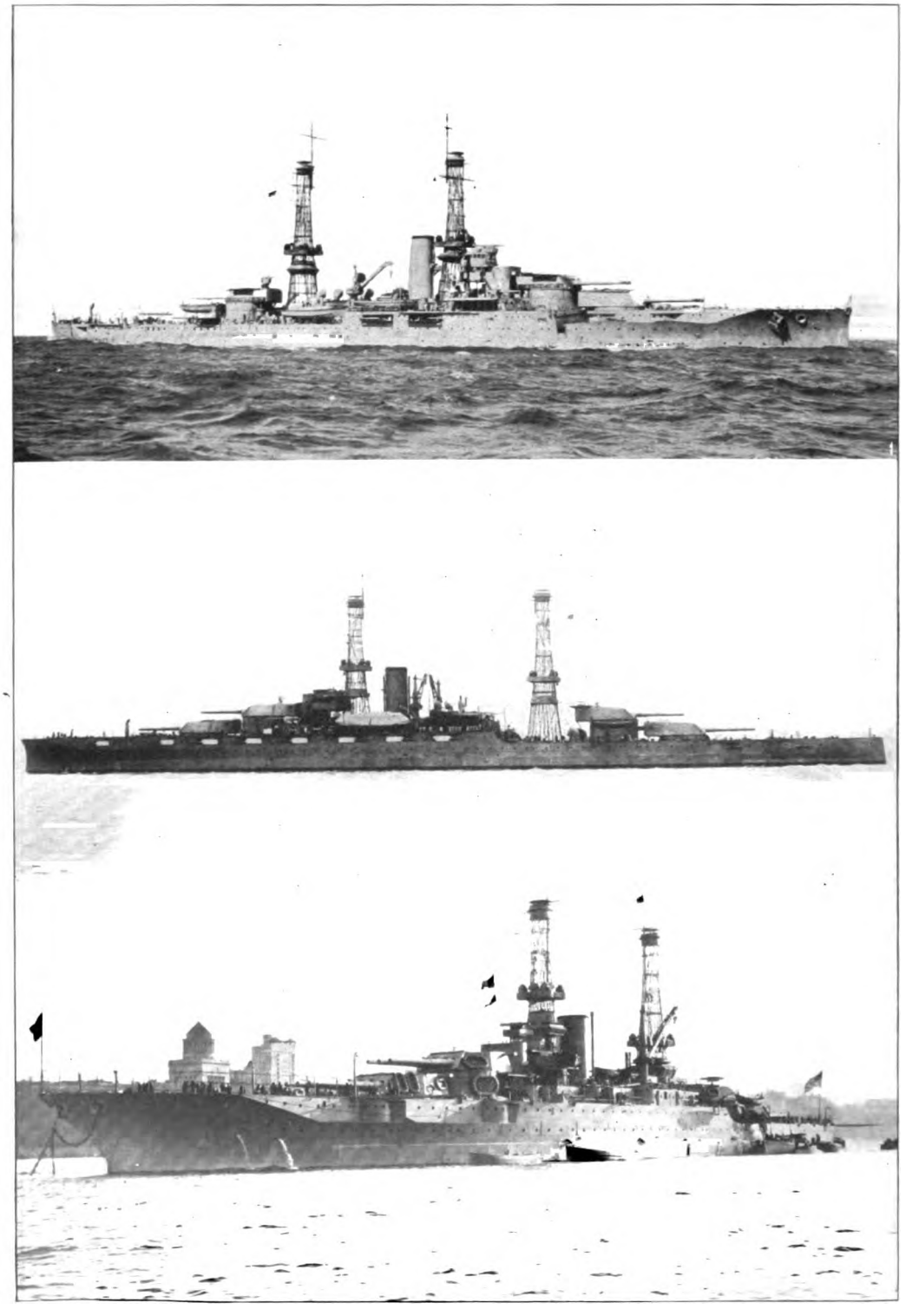


ARGENTINE REPUBLIC BATTLESHIPS
Rivadavia and Moreno

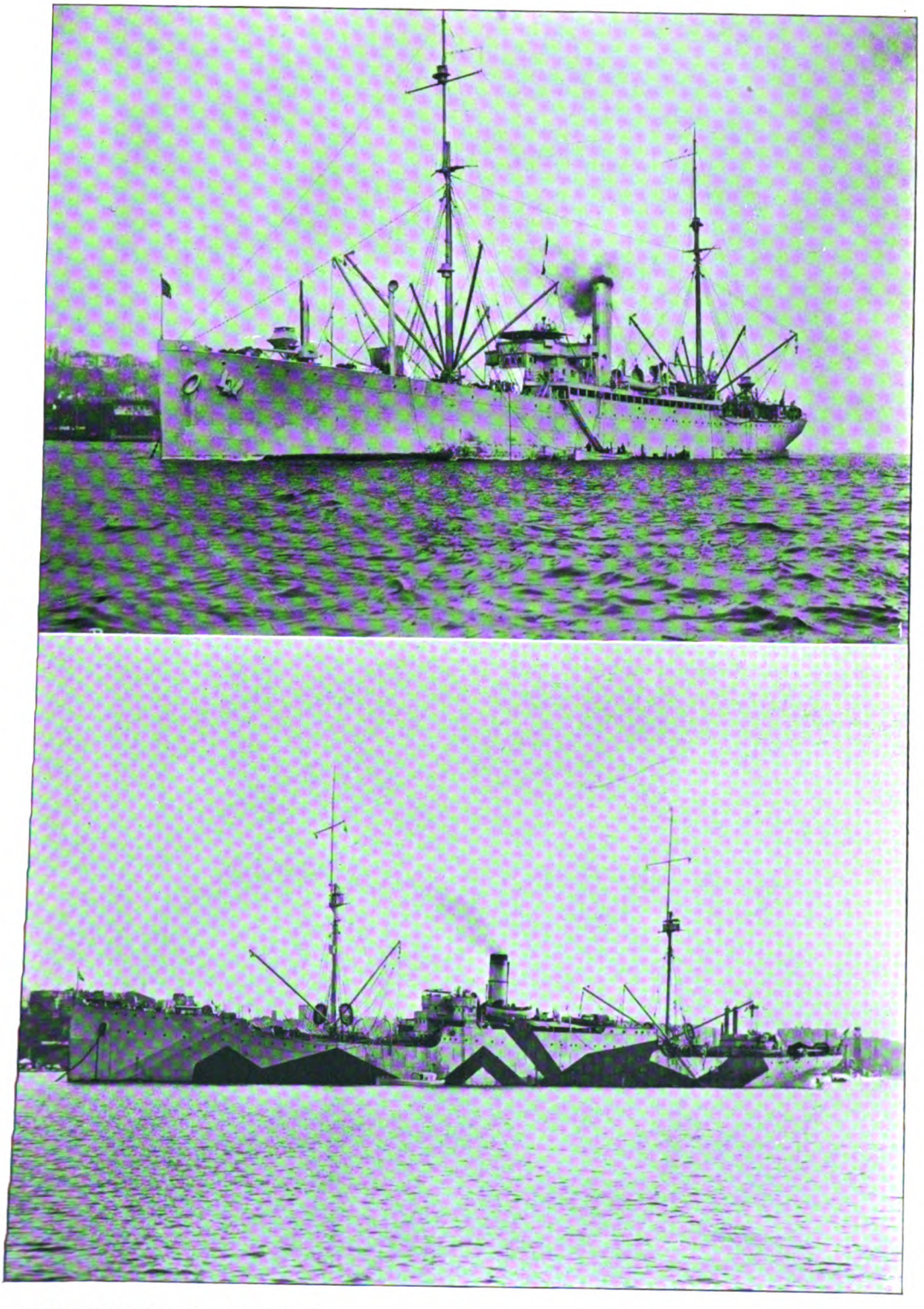


1 U. S. S. Tennessee representing Tennessee and California

2 U. S. S. Colorado representing Colorado, Maryland, Washington and West Virginia

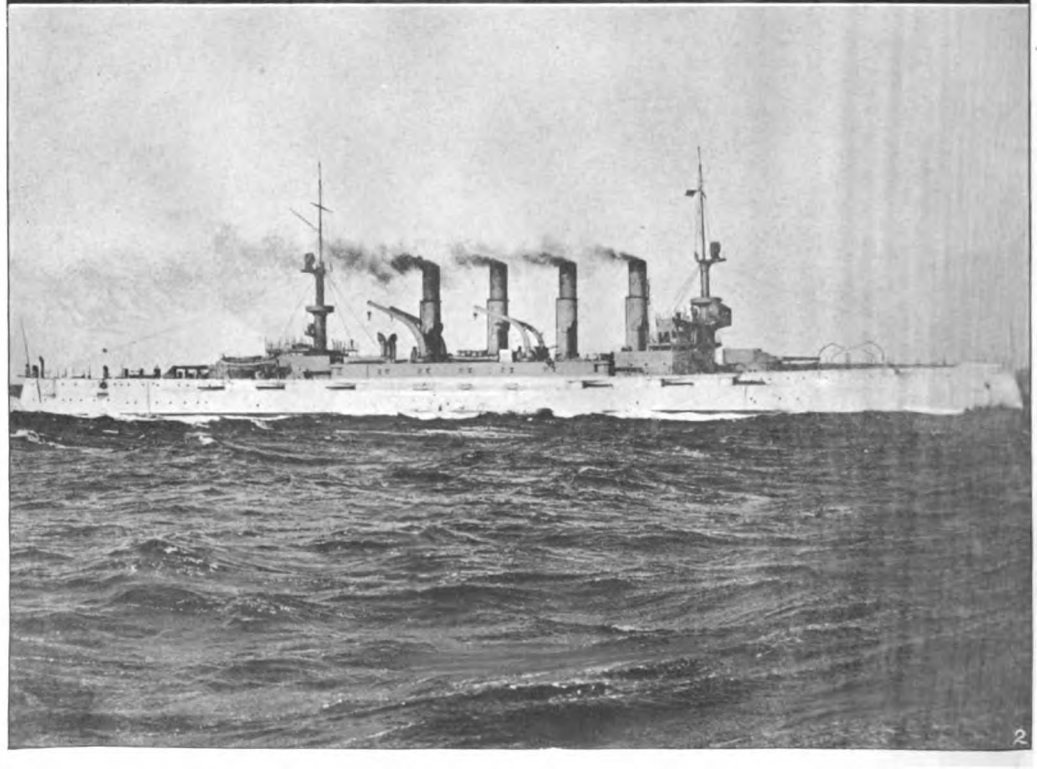


1 U. S. S. Oklahoma representing Nevada and Oklahoma
2 U. S. S. Arizona representing Arizona and Pennsylvania
3 U. S. S. New Mexico representing New Mexico, Mississippi and Idaho



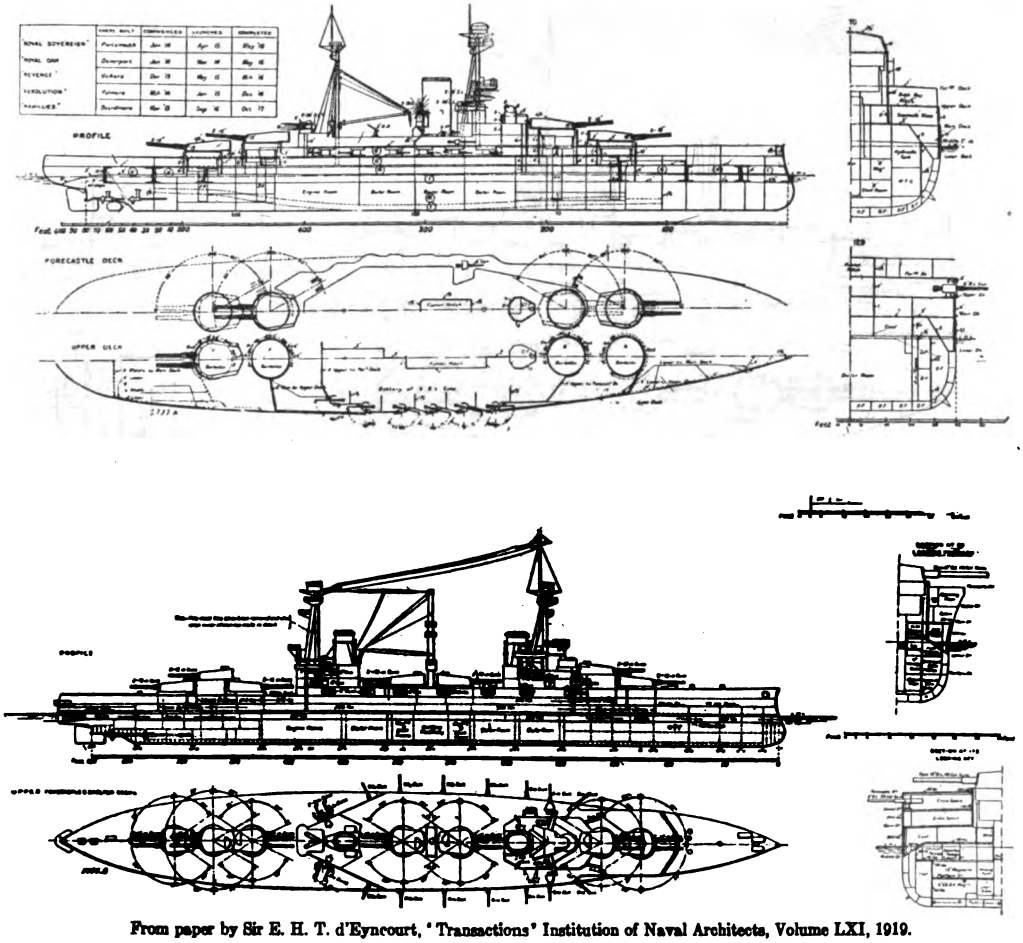
1 U. S. S. Bridge — Supply Ship No. 1

2 U. S. S. Vestal — Repair Ship No. 1



1 U. S. S. Huntington of the Frederick Class. Formerly U. S. S. West Virginia of Maryland Class 2 U. S. S. Montana

tion of the electric drive has permitted, in later designs, an entire rearrangement of the machinery spaces, with consequent great improvement of the protective features of the ship. In actual service the manœuvring power of the vessel due to the electric drive has proved itself quite satisfactory. In its backing power it appears to be superior to the turbine machinery drive on account of the ease and simplicity of reversing operations, and also by reason of the fact that when operating at speeds not exceeding 17 knots only one turbo-generator had happened far out at sea, as was the case on the *New Mexico*, the speed of the ship would have had to be reduced and steadiness on her course could only have been obtained by putting the helm over to counteract the effect of the dead screw. This would also have resulted in a very definite reduction of speed. In the case of this accident on the *New Mexico*, however, it was not necessary to stop the vessel. The trial trip was completed with all four propellers revolving at the fullest speed advisable under the conditions of weather and sea



From paper by Sir E. H. T. d'Eyncourt, 'Transactions' Institution of Naval Architects, Volume LXI, 1919.

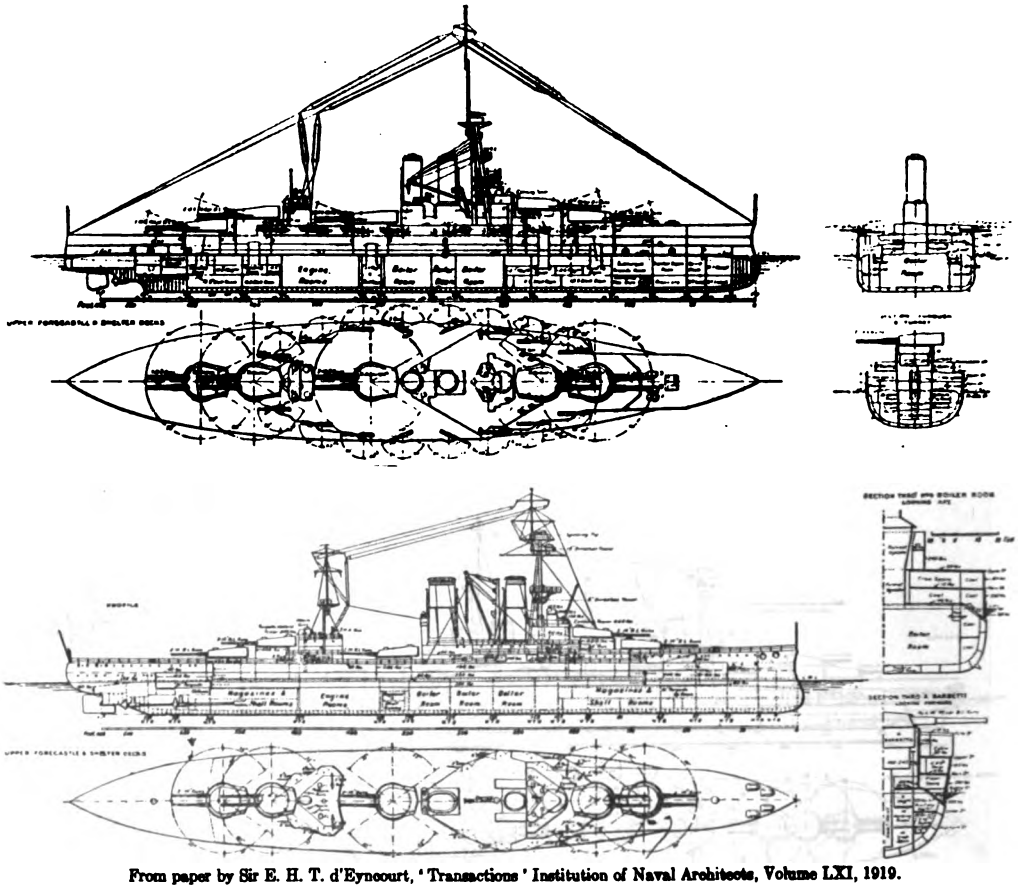
BRITISH BATTLESHIPS
(1) Royal Sovereign. (2) Agincourt.

is used, all driving motors being then capable of being operated at equal speeds without any special action on the part of the operator. This is true whether the engines are going ahead or backing, a result highly desirable in manœuvring in confined waters. An accident to one of the turbines of the *New Mexico* demonstrated quite fully the advantage of the electric type of machinery installation. Had a similar accident happened to the turbine of a turbine-driven vessel, the propeller actuated by that turbine would have been put out of action entirely until the damage had been repaired. If the accident then prevailing. This gratifying result was due to the practicability of using the current generated by the operating turbines for the rotation of all the propeller shafts, thus demonstrating clearly that all shafts could be operated at a uniform speed even though a substantial portion of the turbine power was, through accident or otherwise, out of action. The good performance of the *New Mexico* on trial has been maintained during the 18 months of her subsequent service, and electric drive for the main propelling machinery of the six battle cruisers of the U. S. S. *Lexington* class and the six

battleships of the U. S. S. *South Dakota* class has since been authorized.*

Battleships and Battle Cruisers.— The development of the battleship in size, offensive and defensive qualities, has been rapid in recent years. The necessity for increasing the power of the armament, providing greater armor protection increase of speed, increase of fuel endurance, increase of ammunition supply, etc., has resulted in a steady and, at the present time, almost prohibitive increase in size. In order that battleship development may be traced, for the last quarter century, in a concrete way, Table I of this article has been prepared. This table gives for vessels of that class constructed for the United States navy the principal characteristics, including dimensions, battery power, speed, etc. The armor protection is shown on the profile and battery plans. Although specific data as to cost is not given, it may be stated that the development in this respect has also been extraordinary, the cost of a completed first-class battleship of the present day being more than six times the cost of the battleship of 25 years ago, while the displacement has increased fourfold.

In considering the military features of battleship design, the war between guns and armor is ever present. The quality of armor has steadily improved, and this ordinarily would permit reducing the relative weight of this defensive element But concurrently with the improvement in quality of armor has come great increase in the power of ordnance. So that instead of the thickness of armor and percentage of total weight allotted to that element undergoing a reduction there has been a tendency toward increase. Moreover, this increase in protective features is by no means confined to side armor. Possible under-water damage from torpedo and mine and the new dangers arising from overhead aerial attack, in addition to the greater vulnerability of deck armor to damage from gun fire due to increased angles of fall of projectiles fired from great ranges, have necessitated a very great increase in deck and internal bulkhead armor. The necessity for providing against vessels being put out of action or sunk through damage due to attack by torpedoes and mines has also necessitated the provision of large side compartments throughout the vital portions of the length of the ship in

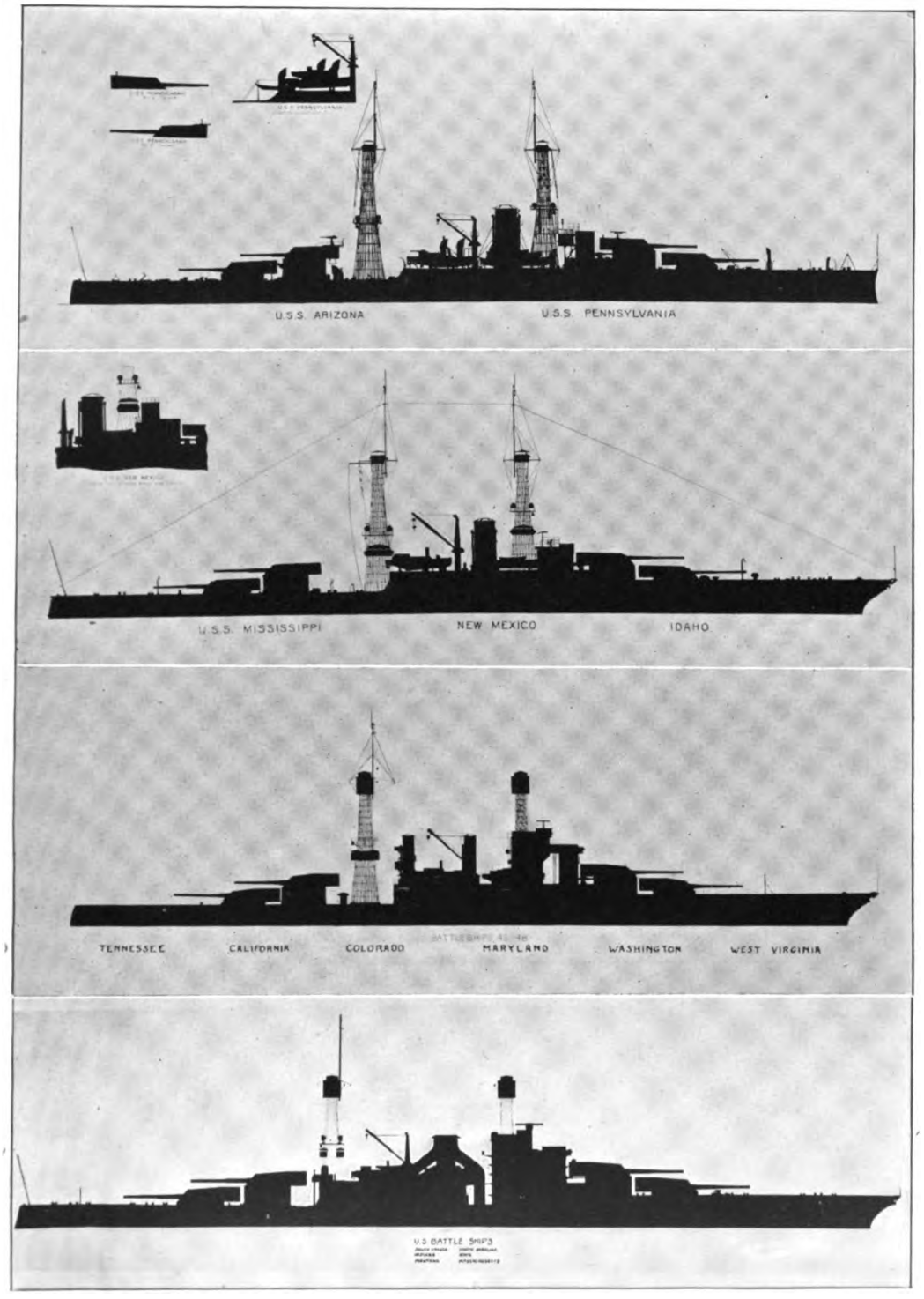


From paper by Sir E. H. T. d'Eyncourt, 'Transactions' Institution of Naval Architects, Volume LXI, 1919.

BRITISH BATTLESHIPS
(3) Erin. (4) Canada.

* Data upon which statements of the machinery performance of the *New Mexico* are based were obtained through courtesy of Rear-Admiral Niffin, Chief of Bureau of Steam Engineering, United States navy.

MODERN WARSHIPS



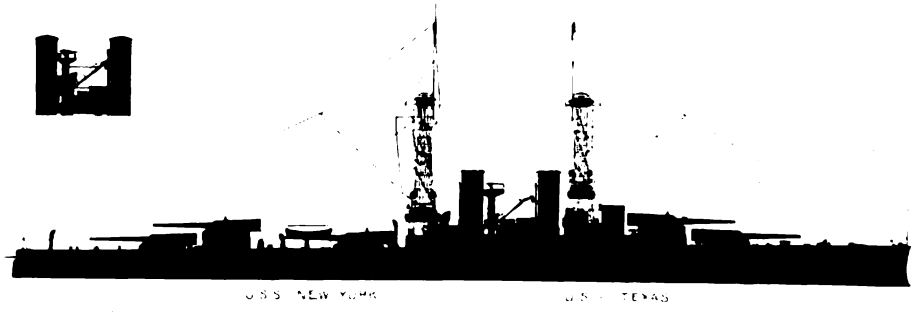
Battleships

(For dimensions and characteristics of vessels see Table I)

MODERN WARSHIPS

U.S.S. OKLAHOMA U.S.S. NEVADA

U.S.S. WYOMING U.S.S. ARKANSAS



U.S.S. NEW YORK U.S.S. TEXAS

Battleships

(For dimensions and characteristics of vessels see Table I)

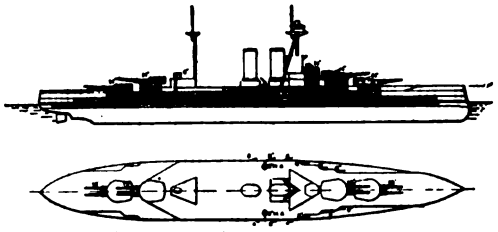
wake of magazine and machinery spaces. These compartments are so arranged as to permit of a very considerable absorption of the explosive effect due to shells which explode in the interior after penetrating the side of the vessel. In some ships already built or whose construction was considerably advanced, the provision of additional explosive compartments for protection against submarine and mine attack took the form of "bulges." There are those, however, who contend that the damage arising from such mine and torpedo attacks can best be guarded against by protecting the vital portions of the vessel by increased wing compartmental subdivisions provided for in the original design of the vessel. This, of course, necessitates increase of beam, but no greater increase than is necessary through the addition of extraneous compartments, as in the case of vessels with "bulges." As indicating the serious increase in beam necessitated by the provision of such special explosive compartments, it may be noted that battleships of recent design have been given a beam only limited by the capacity to pass such a vessel through the Panama Canal locks; so that, in the United States navy, from the *Oregon* of 1890, with a beam of little more than 69 feet, there has now been developed the *South Dakota* class of 1919, whose beam is 106 feet. There are several serious physical limitations which have to be recognized in battleship development. Among the most important of these is the comparatively shallow depth of many important harbors, both naval and commercial. There is also the limitation imposed by the sizes of existing dry docks and the locks of great inter-oceanic canals. It is essential, therefore, to limit the draft to as small an amount as practicable, not only with respect to entry into such harbors under normal conditions, but also to permit entry under damaged conditions and to permit utilization of existing docks and inter-oceanic canal locks. In developing the designs of battleships and other exceptionally large war vessels, the ship designer is confronted with many conflicting requirements. If he permits himself to overdevelop any one of the most important characteristics, he invariably does so at the expense of some other characteristic which may be considered of less importance by some and yet by others may be considered as of equal or greater importance.

In no particular has the development of battleship design advanced to a greater degree than in the element of offensive power. Thus, it will be seen that the main battery of the *Oregon* class, which was considered a very heavy primary battery for that date, was four 13-inch guns of 35 calibres. Subsequently the 12-inch guns of greater length was adopted for the main battery of United States battleships and up to and including the *Arkansas* class, the heaviest gun of the main battery for United States battleships was the 12-inch, 50-calibre gun. The primary battery of the *South Dakota* class, however, consists of twelve 16-inch, 50-calibre guns, mounted in four centre-line turrets, thus making three guns in each turret. It is interesting to note that the general features of turret location and relative heights of barbettes of the *South Dakota* class are identical with those of the *South Carolina* class — the first of the modern all-big-gun ships of the United States navy. There is a very important difference in the battery power, however, in that the *South Carolina* class have only two 12-inch guns in each turret, while, in the *South Dakota* class, there are three 16-inch guns in each turret. As the muzzle energy of the 12-inch, 45-calibre gun of the *South Carolina* is approximately 49,000 foot-tons and the muzzle energy of the 16-inch, 50-calibre gun of the *South Dakota* is approximately 114,000 foot-tons, it will be observed that the energy of broadside of the main battery of the *South Dakota* class is three and one-half times that of the main battery of the *South Carolina* class.

In referring to great developments in ordnance, it is well to bear in mind that not only has the power of guns been greatly increased but the accuracy of fire has been vastly improved due to greater training of personnel and greater precision of instruments and methods of obtaining ranges. It is interesting to note, in this connection, that not very many years ago four and five thousand yards was considered a considerable battle range, and just prior to the outbreak of the Great War 10,000 yards was considered a long battle range. The Battle of Jutland, however, was begun at a range of 20,000 yards, and the range was maintained at that approximate figure for a considerable period. The number of losses of vessels and great damage to vessels through long-range gun fire during this battle give convincing proof of the great strides which have been made in the development and operation of ordnance material.

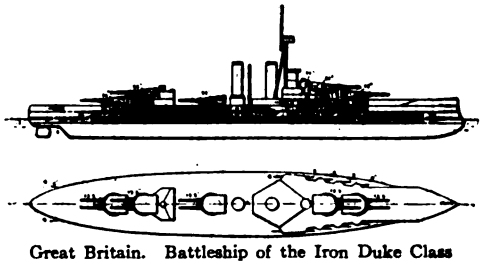
The *South Carolina* class, at the time of their design, represented a definite departure from previous practice in the main battery arrangements of battleships. The idea of the all-big-gun ship is not new. It was not new at the time of the building of the *Dreadnaught* of the British navy, which was, however, the first all-big-gun modern battleship actually built. Outline designs for an all-big-gun ship for the American navy had been prepared prior to the date of the building of the *Dreadnaught*, and a British all-big-gun battleship had been suggested in outline designs as early as 1885. This earlier British all-big-gun ship is thus alluded to in a recent paper published in the 'Transactions' of the British Institution of Naval Architects:

> I left the *Inflexible* shortly before the bombardment of Alexandria. I brought away with me an outline design which had been evolved during the cruise and which was described as a combination of the *Devastation* and *Inflexible* designs. The armament was an "all big-gun" armament of four pairs of 16-inch 80-ton guns mounted in turrets, all placed on the upper deck; one pair at each extremity of the vessel on the middle line as in the *Devastation*, and one pair placed on each broadside *en échelon* as in the *Inflexible*. Thus one pair of guns had direct ahead fire with an arc of training from well abaft the beam on the starboard side to well abaft the beam on the port side; one pair of guns had a direct astern fire with an arc of training from well before the beam on the starboard side to well before the beam on the portside; the pair of guns mounted in the starboard *en échelon* turret had an arc of training on the starboard beam from nearly right ahead to nearly right astern, and a considerable arc of training on the port beam, one gun of this turret also being capable of firing directly ahead and the other directly astern; the fourth pair of guns, in the port *en échelon* turret, had an arc of training on the port beam from nearly right ahead to nearly right astern and a considerable arc of training on the starboard beam, one gun of this turret also being capable of firing directly ahead and the other directly astern. Four big guns could always be brought to bear on any target right ahead or right astern or on either bow or on either quarter; and on the beam six big guns could always be brought to



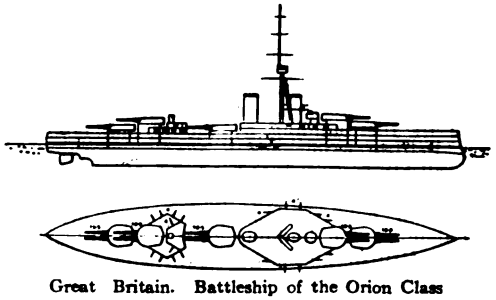
Great Britain. Battleship of the Queen Elizabeth Class

Length 600 ft.; 27,500 tons; speed 25 knots; armament 8-15 in, 12-6 in., 2-3 in. AA. Completed 1915-1916.



Great Britain. Battleship of the Iron Duke Class

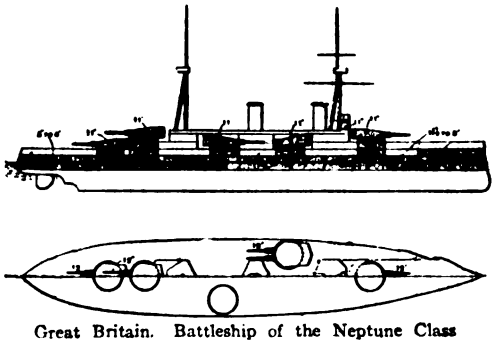
Length 580 ft.; 25,000 tons; speed 21-22 knots; armament 10-13.5 in., 12-6 in., 2-3 in., 4-3pr.



Great Britain. Battleship of the Orion Class

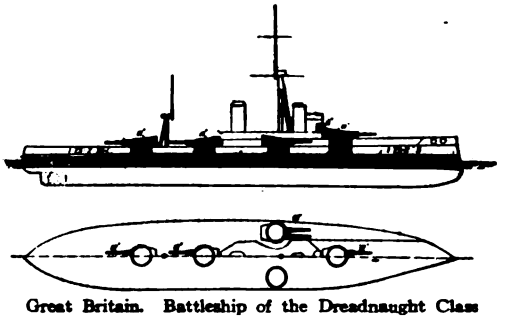
Orion, Conqueror, Monarch, Thunderer } Length 545 ft.; 22,500 tons; speed 21-22 knots; armament 10-13.5 in., 16-4 in., 4-3 pr., 5 small. Completed 1911-12.

Ajax, Centurion, King George V. } Length 555 ft.; 23,000 tons; speed 22 knots; armament 10-13.5 in., 16-4 in., 4-3 pr. Completed 1912-13.



Great Britain. Battleship of the Neptune Class

Length 510 ft.; 19,900-20,000 tons; speed 21.5-21.78 knots; armament 10-12 in., 16-4 in., 4-3 pr., 5 small. Completed 1911.



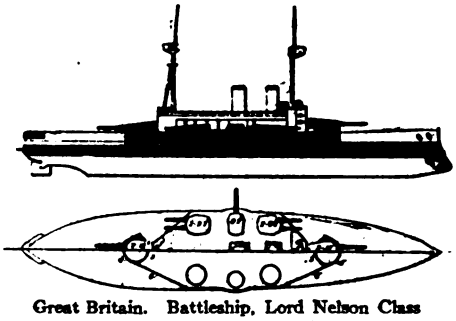
Great Britain. Battleship of the Dreadnaught Class

Dreadnaught — Length 490 ft.; 17,900 tons; speed 21.8 knots; armament 10-12 in., 24-12 pr., 5 small. Completed 1906.

Bellerophon, Temeraire, Superb } Length 490 ft., 18,600 tons; speed 21.6-22 knots; armament 10-12 in., 16-4 in., 4-3 pr., 5 small. Completed 1909.

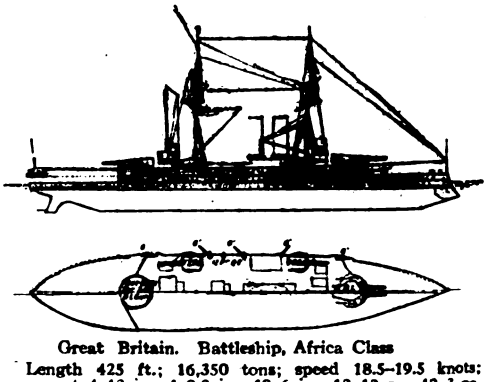
St. Vincent, Collingwood } Length 500 ft.; 19,250 tons; speed 21.5-22.1 knots; armament 10-12 in., 18-4 in., 4-3 pr., 5 small.

N. B. The masts are differently arranged in the later ships.



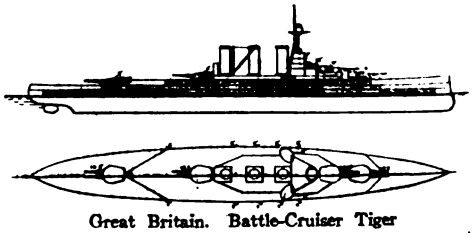
Great Britain. Battleship, Lord Nelson Class

Length 410 ft.; 16,500 tons; speed 18.75-18.9 knots; armament 4-12 in., 10-9.2 in., 24-12 pr., 2-3 pt., 5 small. Completed 1908.



Great Britain. Battleship, Africa Class

Length 425 ft.; 16,350 tons; speed 18.5-19.5 knots; armament 4-12 in., 4-9.2 in., 10-6 in., 12-12 pr., 12-3 pr. Completed 1905-1906.



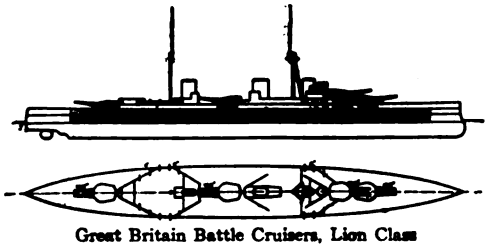
Great Britain. Battle-Cruiser Tiger

Length 660 ft.; 28,500 tons; speed 30 knots; armament 8-13.5 in., 12-6 in. Completed 1914.

bear, and subject to certain limitations eight could be brought to bear on any target.

The scheme involved a displacement of 16,000 tons, and on this account was considered inadmissible by Sir Nathaniel Barnaby. "*

Even prior to this all-big-gun ship proposed in 1885, however, the same principle had been carried out on vessels built or begun for the United States navy during the Civil War. This was notably the case with the large, double-turreted monitors of the *Miantonomoh* type, with four heavy guns in turrets on the middle line of the ship, and the line of battleship *New Ironsides*, with its heavy, broadside battery arrangement. Although, therefore, this particular idea has been developed in various countries at different times — in some instances this development taking place quite independently of conclusive knowledge of what had been done in other countries — several navies, in turn, have taken the lead in the development of certain important features of the all-big-gun battery arrangement. The United States, in this connection, was the first to adopt the concentration of all big guns in turrets on the centre-line, the turrets being so arranged as to permit all guns to fire on each broadside or half the battery to fire dead ahead and the other half dead astern, with large angles of bow and quarter fire in intermediate positions of training. This great increase in efficiency of primary battery fire was obtained by elevating the after turret of the two forward turrets and the forward turret of the two after turrets, as is indicated on the profiles of the *Michigan* class and all subsequent designs for battleships of the United States navy. It was some time before this particular arrangement was adopted by other navies. It is now, however, practically universally employed. It is also of interest to note, in this connection, that one of the severest criticisms made upon the design of the *Michigan* and *South Carolina* class, particularly by foreign critics, was the danger due to firing over the lower turret. In all probability, it was not generally known at that time, that before adopting this design the most exhaustive experiments were made by the United States Navy Department by installing a 12-inch gun on one of the United States monitors in the exact relative location that such a gun would occupy on the



Great Britain Battle Cruisers, Lion Class

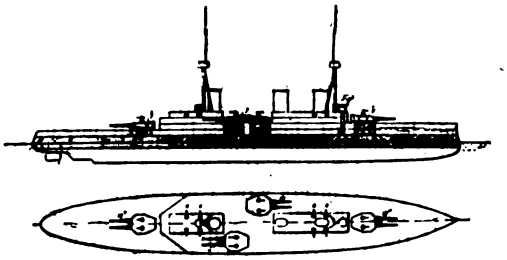
Length 660 ft.; 26,350 tons; speed 28–28.5 knots; armament 8–13.5 in., 16–4 in., 4–3 pr., 4 small. Completed 1912–1913.

South Carolina class and firing over the lower turret in exactly the same way as would occur with the battery of the *South Carolina* in action under war conditions. This experiment had, moreover, been preceded by other experiments on shore to determine the effect when animals were placed in an improvised lower turret and then firing took place directly over that turret.

* From paper by Sir Philip Watts, published in 'Transactions,' of Institution of Naval Architects (Vol. LXI).

In the final experiments, naval officers occupied the most exposed positions in the turret being fired over, and the net result was that the effect of the blast of the guns upon those actually in the turret being fired over was not so great as upon those stationed on the bridge of the vessel in the immediate vicinity of the gun being fired. In fact, in the most important developments in design of warships for the United States navy, theory has been supplemented wherever practicable by extensive practical experiments prior to making final decision.

There are many who contend that the advantage attained by high-speed battleships is not commensurate with the great additional weight



Great Britain Battle Cruisers, Indomitable Class

Indomitable, Inflexible: Length 530 ft.; 17,250 tons; speed 26 knots; armament 8–12 in., 16–4 in., 5 small. Completed 1908–9.

New Zealand, Australia: Length 555 ft.; 18,800 tons; speed 25 knots; armament 8–12 in., 16–4 in., 4–3 pr., 5 small.

* The centre turrets are more en échelon than in the two earlier ships.

which must be allotted to the longer hull and the more powerful propelling machinery required for such high speeds. This additional weight can only be obtained by reducing the amount allowed for guns, armor, ammunition or other essential elements of offense or defense. Conservative naval opinion holds that armor and armament still take precedence on the battleship and that the more moderate speeds necessary to allow for this heavier armor and armament are preferable for battleships; also, that for vessels in which unsually high speed is particularly desirable a special type of the battle cruiser order should be adopted. In fact, the battle cruiser is neither more nor less than a battleship in which speed has been given very great prominence at the expense of armor protection and, to a more limited extent, at the expense of battery, the calibre of the guns on battle cruisers, though not the number, being the same as that provided for battleships of the same period of design. In order to obtain the high speeds required, the length of battle cruisers is necessarily very much greater than that of battleships. The weight assigned to propelling machinery is also very much greater. The degree of armor protection is, on the other hand, less. It is, therefore, obvious that the considerable increase in speed provided for the battle cruiser must be obtained at the expense of other very important qualities.

In the beginning, the British navy took the lead in the development of battle cruisers, the first group being the *Indomitable* class. They were closely followed by the German navy with the *Von der Tann* and subsequent classes. From these type vessels have been developed subsequent battle cruisers, the greatest present development being embodied in the powerful

vessels of the *Lexington* class in the United State navy, the *Hood* and *Renown* classes of the British navy, and the *Hindenburg* and *Von Spee* classes formerly of the German navy. The British battle cruiser *Hood*, of which it was intended originally to build four, could probably be more properly styled a high-speed battleship, since the reported armored protection and armament are those of the battleship.

Only a few years ago, the employment of such extreme dimensions for vessels of war would have been considered highly improbable. Today such dimensions are accomplished facts.

Without repeating here the dimensions and characteristics of many of the latest vessels of the battleship and battle-cruiser types — particulars of which, for the principal navies, are fully set forth in the tables and plans accompanying this article — the extensive development of these classes of vessels is sufficiently indicated by the enumeration of the principal particulars of the largest of these vessels so far put under construction, namely, United States battleships Nos. 49 to 54—*South Dakota* class—and United States battle cruisers Nos. 1 to 6—the *Lexington* class. The design of these two classes of vessels represents practically the latest word in vessels of their type, and while it is not practicable to go into the details of their design, it is only just to the responsible authorities of the United States Navy Department to state that they appear to have availed themselves, in the highest degree, of the information obtained during the recent war, and to have produced designs of vessels which will probably hold the record for some years to come.

PRINCIPAL CHARACTERISTICS OF UNITED STATES BATTLESHIPS NOS. 49–54.

South Dakota Class.

Length between perpendiculars	660 feet.
Length over all	684 feet.
Breadth, extreme	106 feet.
Mean draft, about	33 feet.
Displacement, about	43,200 tons.
Main propelling machinery	60,000 S. H. P.
Speed	23 knots.

Armament:
- Twelve 16-inch guns in four turrets.
- Sixteen 6-inch guns.
- Four 3-inch anti-aircraft guns.
- Two 21-inch submerged torpedo tubes.

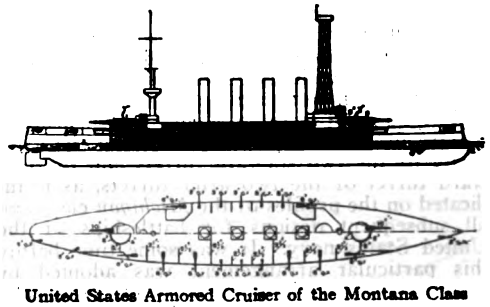
PRINCIPAL CHARACTERISTICS OF BATTLE CRUISERS NOS. 1–6, AFTER MODIFICATION OF ORIGINAL PLANS.

Lexington Class.

Length between perpendiculars	850 feet.
Length over all	874 feet.
Breadth, extreme	105 feet 5¼ inches.
Mean draft, about	31 feet.
Displacement, about	43,500 tons.
Main propelling machinery	180,000 S. H. P.
Speed, about	33.25 knots.

Armament:
- Eight 16-inch guns in four turrets.
- Sixteen 6-inch guns.
- Four 3-inch anti-air craft guns.
- Four 21-inch submerged torpedo tubes.
- Four 21-inch deck torpedo tubes.

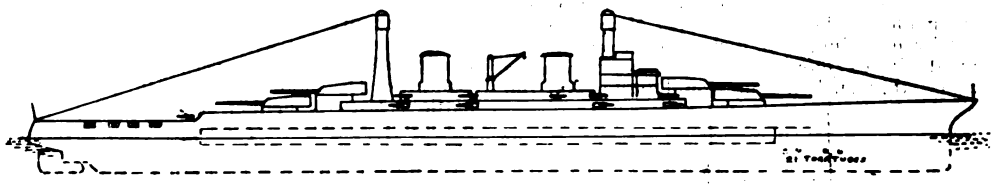
The modifications of the plans for battle cruisers of the *Lexington* class were based, in large part, upon knowledge obtained during the

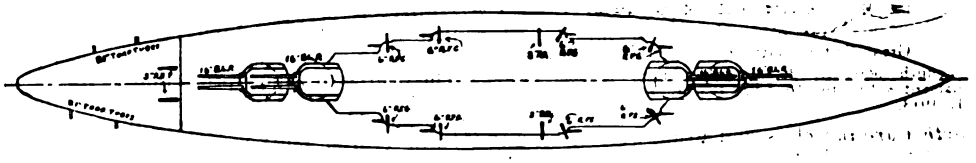


United States Armored Cruiser of the Montana Class

Length 502 ft.; 14,500 tons; speed 22–22.5 knots; armament 4–10 in., 4–6 in., 12–3 in., 2–3 in. AA. 17 small (new armament). Completed 1906–1908.

Great War. This involved a considerable expansion of armored protection for reasons already referred to; also a more elaborate pro-





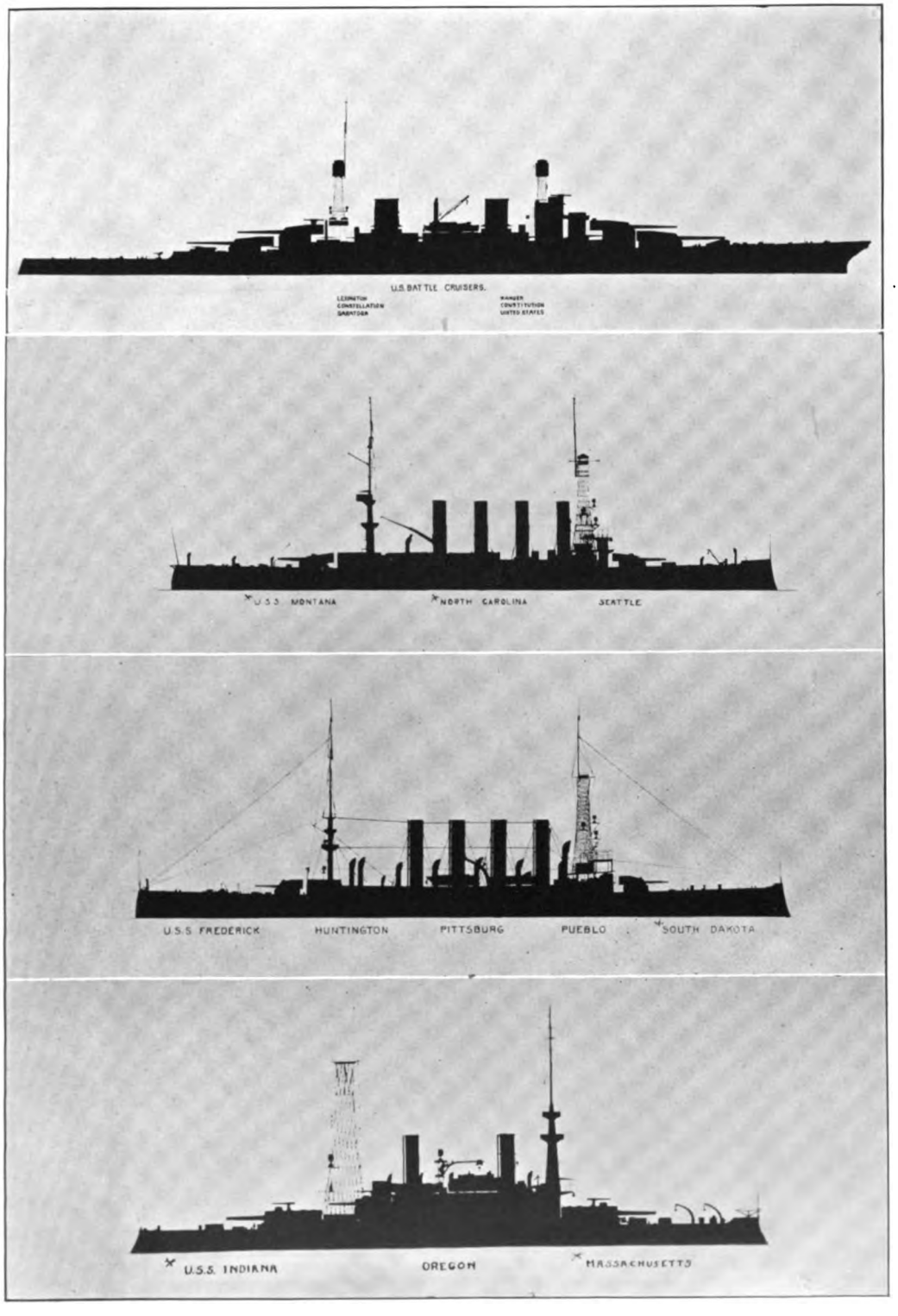
UNITED STATES BATTLE CRUISERS
Nos. 1 to 6

No. 1. Lexington
2. Constellation
3. Saratoga
4. Ranger
5. Constitution
6. United States

Length 850 feet; breadth 105 feet 4 inches; draft 31 feet; displacement 43,500; speed 33¼ knots.
Armament 8–16", 16–6", 4–3" AA.

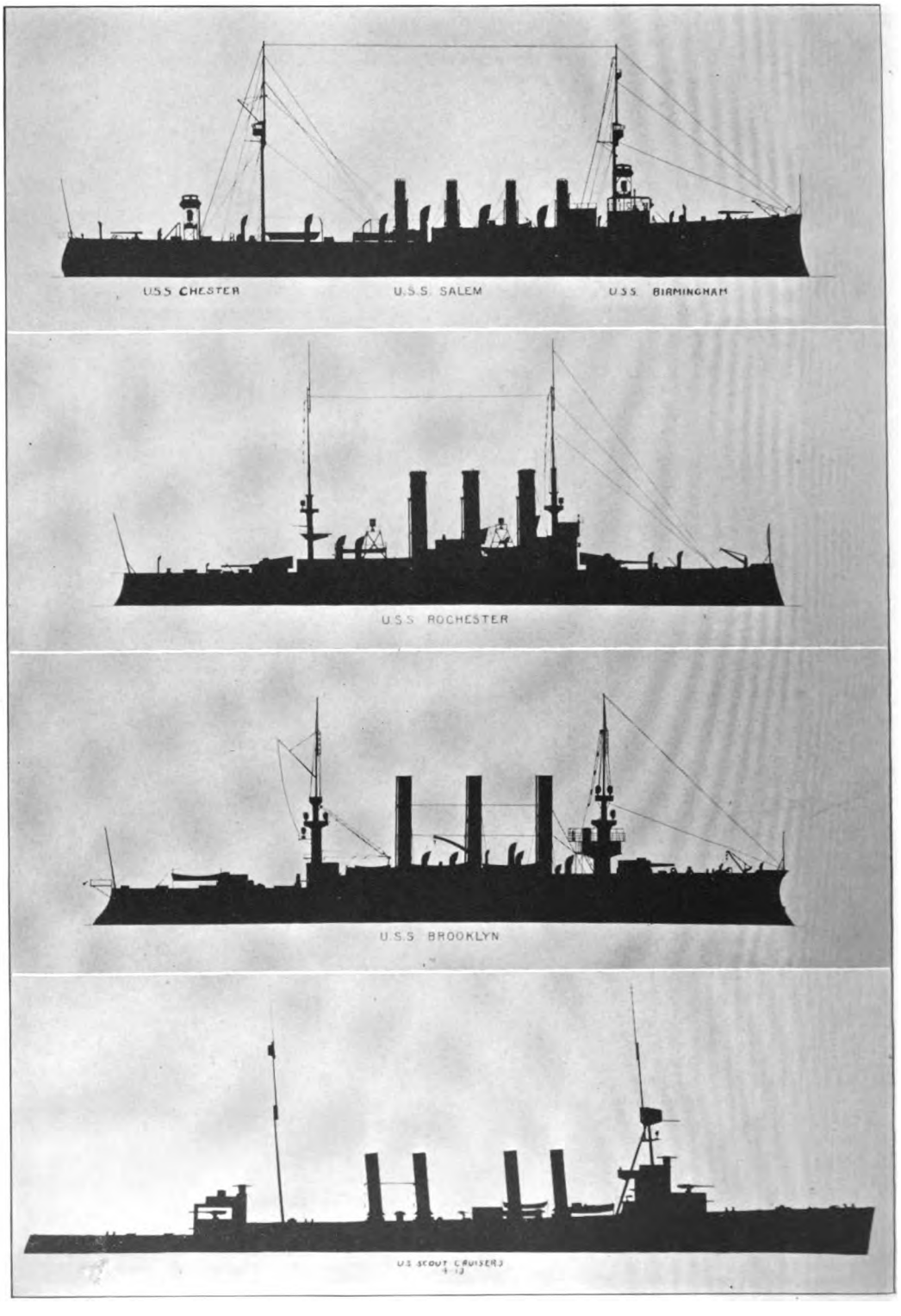
Muzzle energy of one 16 inch gun = 114,130 ft. tons.
Muzzle energy of one 6 inch gun = 6,550 ft. tons.

MODERN WARSHIPS



1 Battle Cruiser **2 and 3 Armored Cruisers** **4 Battleship**

(For dimensions and characteristics of vessels see Table I)

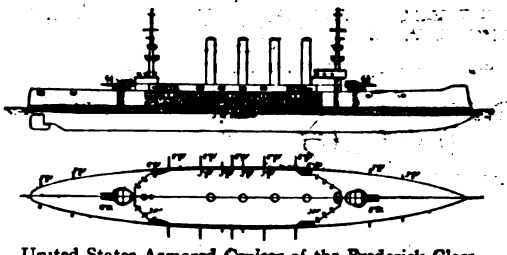


1 and 4 Scout Cruisers **2 and 3 Armored Cruisers**

(For dimensions and characteristics of vessels see Table I)

vision for the protection of underwater portions of the vessel from damage due to explosive action of torpedoes and mines, especially in the wake of magazine and machinery spaces. The modifications involved a reduction of nearly two knots in the original designed speed but this sacrifice in speed was considered to be amply compensated for.

It is well, in any consideration of battle cruisers, to bear in mind the causes which underlie the development of this type of vessel. Originally, unarmored cruisers with light batteries were attached to battle fleets to act as screens and to obtain authoritative information concerning enemy movements. These light cruisers were found to be ineffective in view of the growing tendency to provide more heavily armed and armored scout vessels; hence the gradual development of the armored cruiser. In course of time, developments of similar craft in various navies rendered the armored cruiser incapable of performing the highly important service of keeping in contact with the enemy, menacing his lines of supply in overseas transportation, and being able to meet on equal or superior terms vessels which could be employed for this purpose by a possible enemy. While the latest developments in battle-cruiser design indicate a tendency to attempt to combine the powerful battery and armor protection of the battleship with the very high speeds heretofore associated only with battle cruisers, actual experience in the Great War has indicated that



United States Armored Cruiser of the Frederick Class

Length 502 ft.; 13,680 tons; speed 22–22.4 knots; armament 4–8 in., 4–6 in., 10–3 in., 28 small and AA. (new armament). Completed 1905–1907.

the logical working out of such a development would result in sizes of warships which would be practically prohibitive, not only as regards cost, but as regards ability to utilize the largest existing dock facilities, inter-oceanic canal locks and a large number of the most important harbors.

It is worthy of note that recent experience in actual battle has demonstrated the efficiency of the latest type of armored protection as well as the latest type of under-water protection against damage from torpedoes and mines. A very late type of British battleship, the *Marlboro*, and one of the later types of German battle cruisers, the *Seydlitz*, received serious damage through torpedo attack during the Battle of Jutland, but remained in battle line and gave an excellent account of themselves for a considerable time thereafter.

It is quite impossible, in the limited space available, to even touch upon many questions involved in the efficient development of battleship and battle cruiser design. It may not be out of place, however, to state that actual results under battle conditions have very largely confirmed the conservative expectations concerning these vessels held by those who design warships and those who ultimately command such vessels singly or in fleet action. Moreover, it seems more than probable that the battleship and battle cruiser type will continue to be regarded as vital elements in the strength of great navies.

Large Light Cruisers.—The only navy which has so far developed to so great an extent this class of vessel is the British navy. The original group comprised three vessels, the *Courageous*, the *Glorious*, and the *Furious*. The *Furious*, however, was subsequently transformed into an aircraft carrier. As these vessels represent a distinct departure in cruiser design, no better description can be given than that presented by their designer in a recent paper read before the British Institution of Naval Architects:*

Whilst the designs of *Renown* and *Repulse* were in progress, I received instructions to design some very high-speed ships carrying powerful guns of a size sufficient to keep their speed in moderate weather, but to have a draught lighter than any existing British or enemy ship of the same class, so as to be able to navigate shallow waters, if required.

As sanction was not likely to be obtained for building more capital ships taking two years or longer to complete, while additional light cruisers had been already approved, it was decided to build *Courageous* and *Glorious* on the lines of very large light cruisers mounting a few guns of heaviest calibre, so as to be able to annihilate any enemy light cruisers or raiders. They were to have thin protection, similar to our light cruisers, and a speed of not less than 32 knots, the draught being restricted to about 22 ft., or 5 ft. to 6 ft. less than any existing battleship or battle cruiser carrying such heavy guns, the main armament of four 15-in. guns in two turrets, one forward and one aft, making them a match for any raider or light cruiser that might be encountered. At this time it should also be remembered that the armaments of ships, especially as regards heavy guns, had to be regulated by the guns and gun-mountings which would be available or could be manufactured in the time at our disposal, and this condition applied to the 15-in. mountings which were adopted for these ships. The secondary armament consisted of eighteen 4-in. guns in six triple mountings, similar to the triple mountings of the *Renown* and *Repulse*. The side armor consisted of 2-in. protected plating on top of the 1-in. shell plating, as in our light cruisers, and a thin protective deck was worked all fore and aft, but this was considerably thickened over the magazines after Jutland. A modified bulge was arranged for, as in *Renown* and *Repulse*.

The machinery adopted for these ships was of the type fitted in the light cruiser *Champion*. It consisted of a 4-shaft arrangement of geared turbines, the power being transmitted to the propeller shafts by double helical gearing. The eighteen boilers of Yarrow small tube type were also similar to those of the light cruisers, and with all-oil firing a power of 90,000 S. H. P. at about 340 revolutions was aimed at. Such trials as it was possible to make showed that 32 knots could easily be obtained at the designed displacement, and reports show that on Service this is actually exceeded.

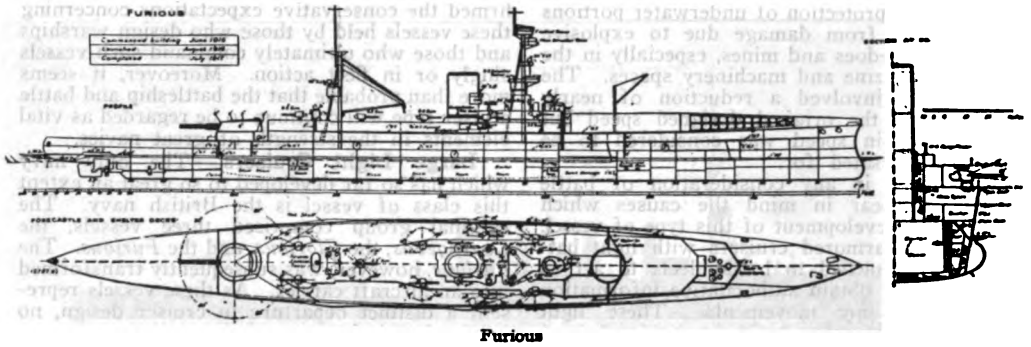
The design of these vessels was begun late in January 1915, and the order for one ship (*Courageous*) was placed with Messrs. Armstrong and the other (*Glorious*) with Messrs. Harland & Wolff, the latter making their own machinery and Messrs. Parsons supplying the machinery for Messrs. Armstrong's ship.

It was intended that these vessels should be built in a year, or as near that as possible, but this was not realized, and the ships were both commissioned in October 1916.

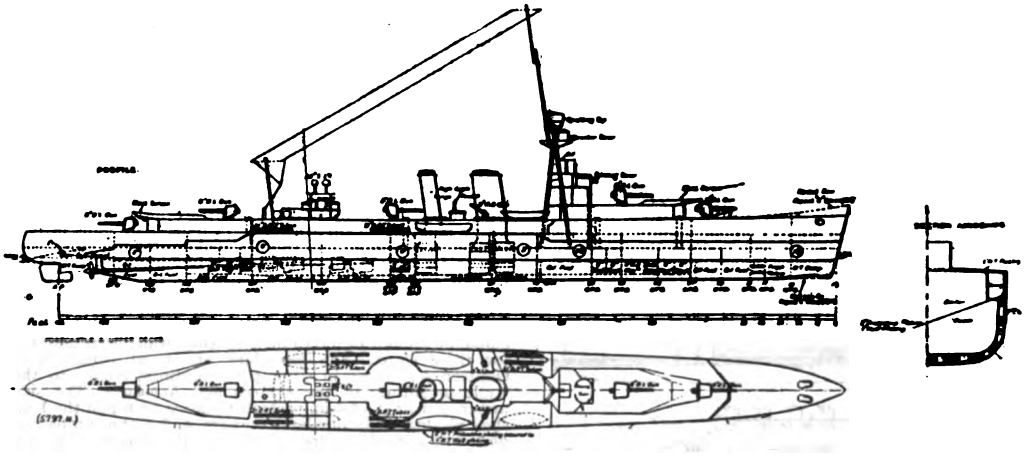
On her commissioning trials, the *Courageous* worked up to full power, and while steaming during the trials at full speed she met very heavy weather. Some signs of weakness were shown at the fore side of the forward turret where there is an inevitable discontinuity of longitudinal strength, and some doubling plates were accordingly added to the *Courageous*. Her sister vessel *Glorious* was in commission for over a year before similar additions were made to her, although no signs of weakness were shown. This incident shows that the very high speed obtained on trial, reacning 32 knots, should hardly be maintained against head seas in heavy weather.

The *Furious* was similar to, but a modification of, the *Courageous* and *Glorious*, having about the same length and the same machinery, but the form of midship section was somewhat different, having a more pronounced bulge and a

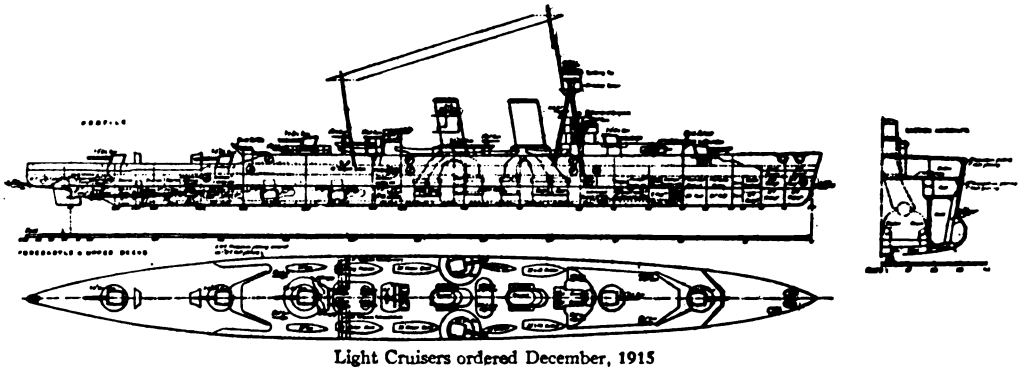
* Sir E. H. T. d'Eyncourt "Naval Construction During the War," 'Transactions' Institution of Naval Architects (Vol. LXI; 1919).



Furious



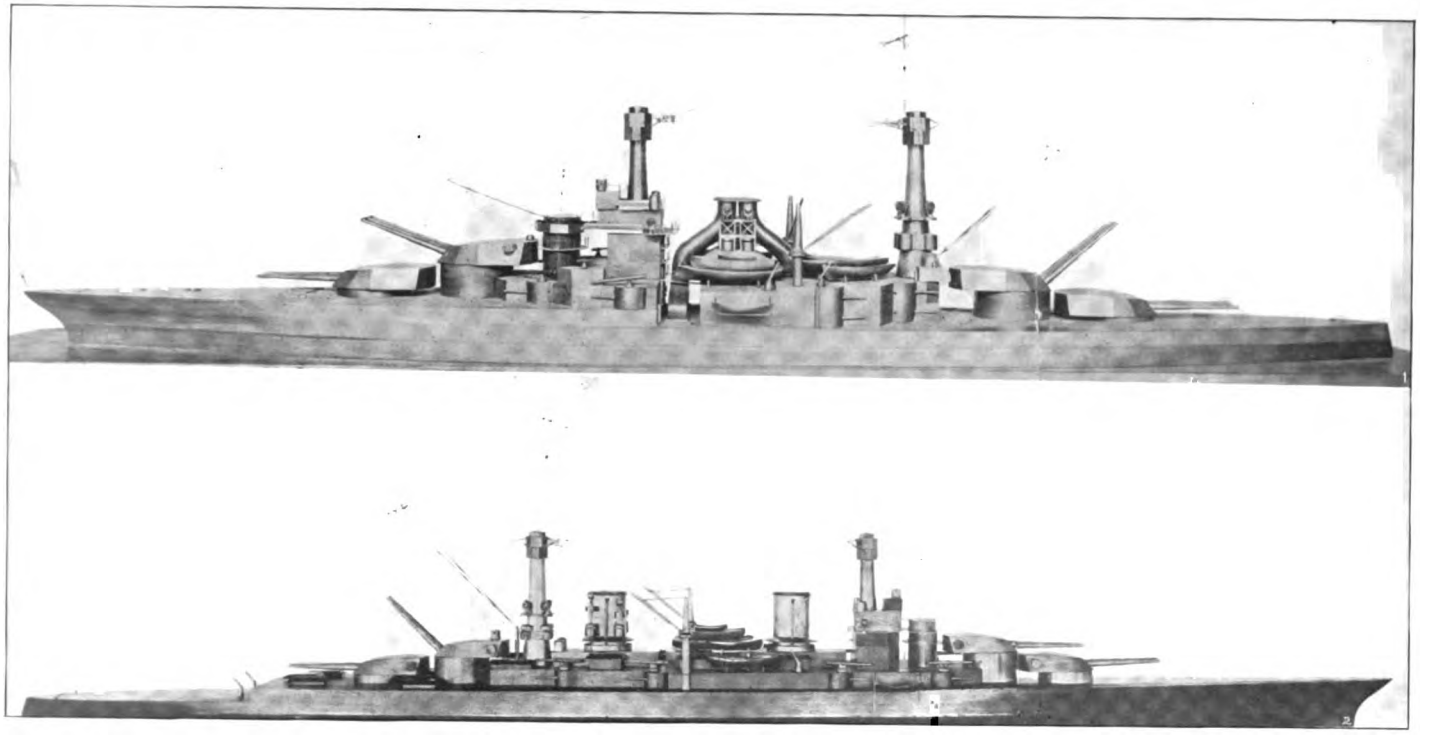
Light Cruisers
(Ordered April 1916) "Ceres," "Curacoa," "Curlew," "Cardiff," "Coventry."
(Ordered June-July 1917) "Cairo," "Capetown," "Carlisle," "Colombo," "Calcutta."



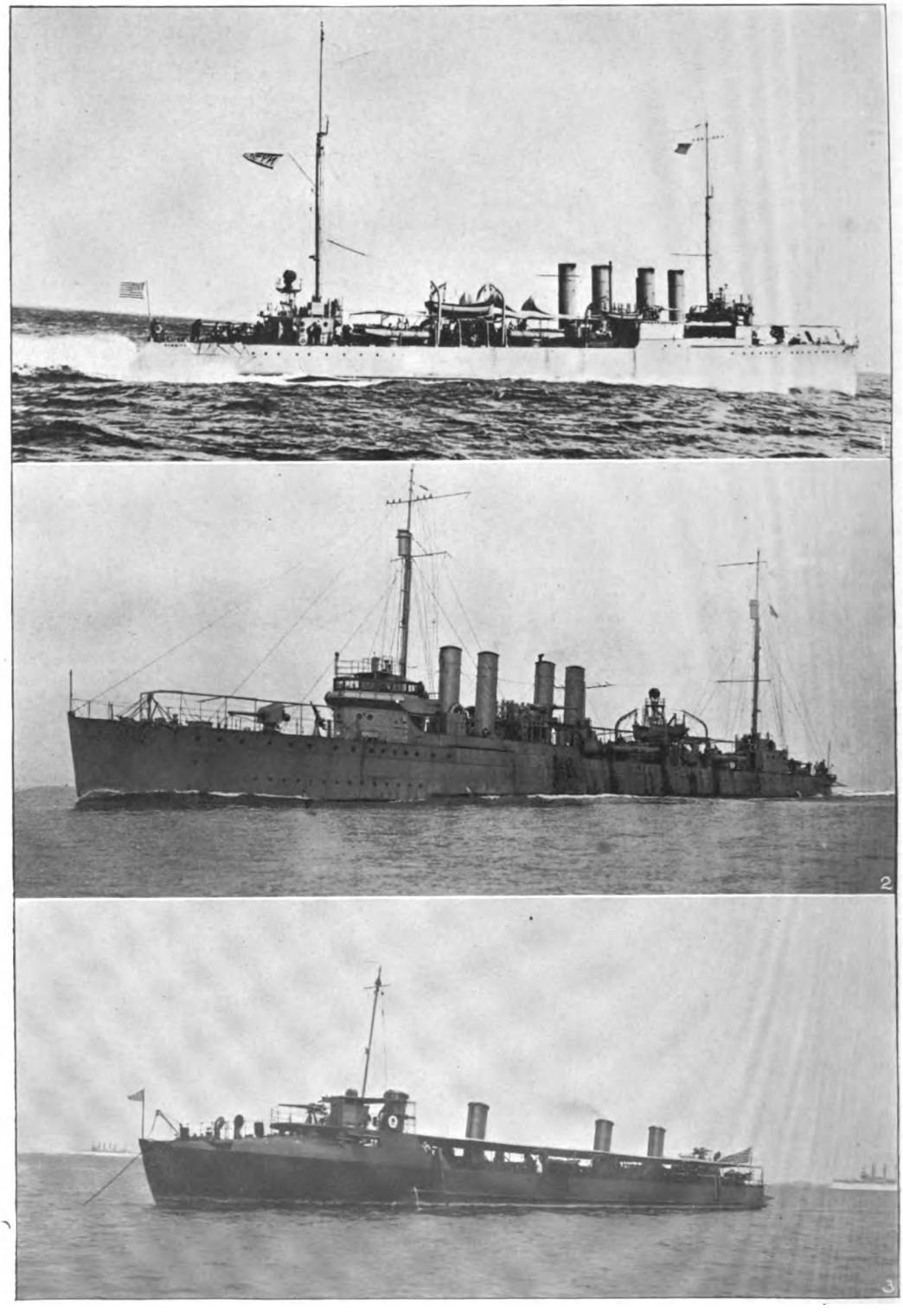
Light Cruisers ordered December, 1915

"Raleigh," "Effingham," "Hawkins," "Frobisher," "Cavendish," ("Cavendish," re-arranged to carry air craft and renamed "Vindictive.")

From paper by Sir E. H. T. d'Eyncourt, 'Transactions' Institution of Naval Architects, Volume LXI, 1919



1 Model of the South Dakota Class representing the battery arrangement of the South Dakota, Indiana, Iowa, Massachusetts, Montana and North Carolina
2 Model of the Lexington Class representing the battery arrangement of the Constellation, Constitution, Lexington, Ranger, Saratoga and United States



1 U. S. S. Babbitt — Destroyer No. 128
2 U. S. S. Burns — Destroyer No. 171
3 U. S. S. Stewart — Coast Torpedo Vessel No. 13

simpler form of main framing and structure of the hull. The armament also was different, each turret, instead of having two 15-in. guns, was arranged to carry one big gun of 18-in. bore, although arrangements were made to substitute pairs of 15-in. guns, if thought desirable later.

The order for this ship was placed with Messrs. Armstrong about two months after that of *Courageous*, and she was to be finished in the shortest possible time. Early in the spring of 1917, however, the necessity for having fast aeroplane-carriers became very obvious, and it was approved to fit *Furious* for this purpose. This entailed doing away altogether with the fore turret and making other considerable alterations. A large hangar was built on the forecastle deck, and a flying-off platform 160 ft. long was arranged on the roof of the hangar, which was designed to house about ten machines. Later it was decided to remove the after turret as well, and a flying-on deck 300 ft. long, extending from the funnel aft, was constructed.

The secondary armament, which had consisted originally of eleven 5½-in. guns, was retained, with the exception of one gun; the remaining ten guns being rearranged. Four sets of triple 21-in. torpedo tubes were fitted on the upper deck aft, and one pair each side on the upper deck forward.

After these alterations were completed, the ship was tried and commissioned in July 1917, a speed of 31½ knots being obtained with 94,000 S. H. P. at 330 revolutions.

From the speed point of view the great advantage of size and length is clearly shown in these ships compared to T. B. D.'s. In *Repulse*, with 4 times the horse-power we can drive at the same speed as a destroyer a vessel of about 24 times the displacement, and in *Courageous*, with about 3½ times the horse-power of a destroyer, we can drive one of nearly 18 times the displacement at the same speed. This in smooth water: in anything of a head sea, the T. B. D.'s are left behind altogether by these great ships.

Light Cruisers.—Another type of vessel whose design was developed to meet the requirements of naval operations is represented by the *Raleigh* class of the British navy and scout cruisers 4 to 13 of the United States navy. In the case of the light cruisers of the *Raleigh* type, a two-inch armor belt was provided for the whole extent of the machinery and magazine spaces. This, with the hull plating, made an effective protection of three inches of steel. The main battery consisted of seven 7½-inch guns. Great prominence was given to the element of speed, these vessels having a designed speed of 30 knots an hour. The attainment of such high speeds for a vessel of this class is only obtainable, however, by a great increase in displacement and length. The principal characteristics of the *Raleigh* class and United States scout cruisers Nos. 4 to 13 are given below:

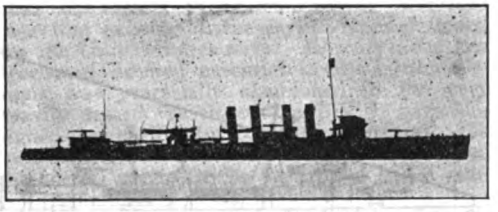
	British Raleigh Class	U. S. Scout Cruisers 4 to 13
Length between perpendiculars	565 ft. 0 in.	550 ft. 0 in.
Length overall	605 ft. 0 in.	555 ft. 6 in.
Breadth, extreme	65 ft. 0 in.	55 ft. 0 in.
Load draught, mean	17 ft. 3 in.	13 ft. 6 in.
Displacement in tons	9,750	7,100
Shaft horse-power of engines	60,000	90,000
Speed at load draught (knots)	30	34.5

Armament, British *Raleigh* Class:
Seven 7.5-inch guns
Twelve 3-inch (4 H. A.) guns.
Six 21-inch twin tubes.

Armament, U. S. Scout Cruisers 4 to 13:
Eight 6-inch, 53 cal. guns.
Two 3-inch anti-aircraft guns.
Two 21-inch twin tubes.

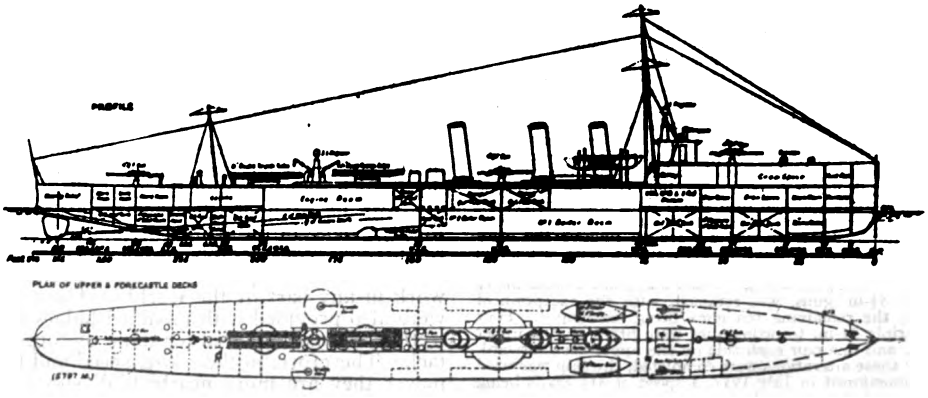
It is well to note that the *Raleigh* class is considerably larger than the United States scout cruiser class, and carries a much heavier main battery, and has, as with the United States scout cruisers, a light armor protection. There is, however, very great inferiority in speed as compared with the scout cruiser class. These differences in characteristics are due to the different purposes for which these vessels were intended. The United States scout cruisers are, in effect, greatly amplified destroyers of a size capable of keeping the sea and maintaining considerable speed under all conditions of weather. They also have a battery which permits them to give a good account of themselves, except as against heavily armed cruisers and battleships. The *Raleigh* class, on the other hand, were intended as a development of a preceding type of light cruiser which had found much favor in the British navy, though the propelling machinery was based upon the destroyer type. The *Raleigh* class, in the words of the designer, represented "a considerably heavier class of light cruisers, more especially designed for ocean work in any part of the world." These vessels were also provided with modified bulges as protection against under-water mine or torpedo attack. Therefore, in their size, speed and battery power they are more nearly high speed developments of previous light cruisers than an extreme development of the destroyer type, as is the case with the United States scout cruisers.

Destroyers.— No one class of war vessel has demonstrated its usefulness in actual war to a greater degree than the destroyer class. This type of vessel has proved itself indispensable as

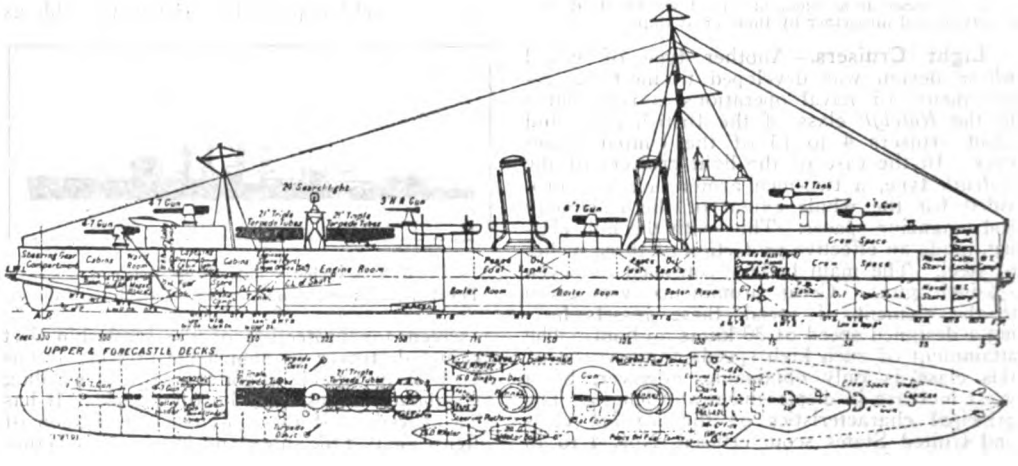


U. S. S. Preble — Latest type destroyer.
For dimensions and characteristics of vessel, see Table I.

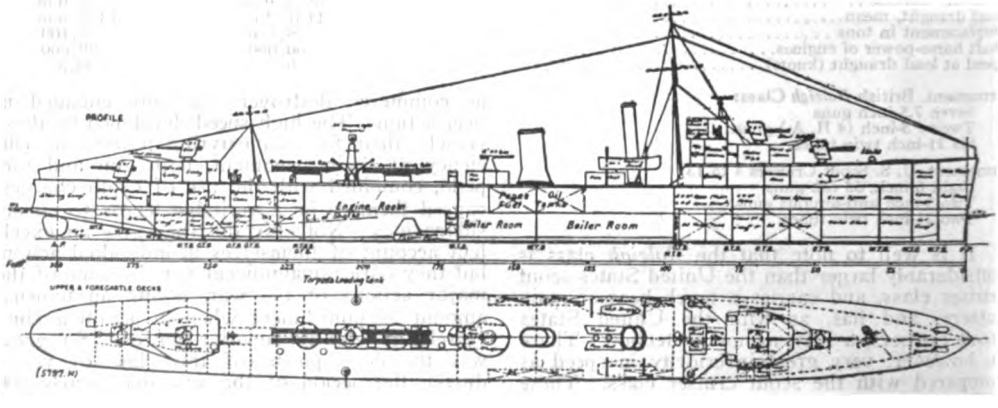
a screen for protection of the battleship fleet against destroyer or submarine attack. It has also been invaluable in convoy work in warding off submarine and other hostile attacks. It has also proved itself the most efficient weapon of offense against the submarine in general, whether the submarines were acting singly or in groups as commerce destroyers or were engaged in fleet action. The high speed developed by these vessels, their fine manœuvring power, the efficiency of their armament, both gun and torpedo, combined with the use of depth charges, caused them to be a veritable terror to enemy submarines. Not only did they give an excellent account of themselves in individual action, but they bore a magnificent part in some of the major actions of the war, taking an unusual amount of punishment when in action against vessels of greatly superior power. So great was the development of this class of vessel during the period of the war that nearly 300 were added to the effective forces of the British navy or were in course of construction; also nearly 300 have been built or placed under



" M " Class Destroyer. Admiralty Design 1914



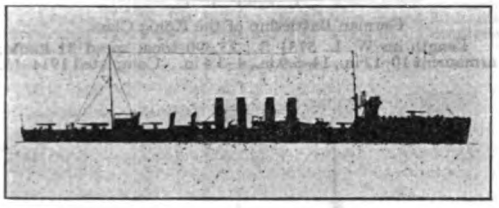
H. M. S. " Vectis " ("V" Class). Admiralty design



H. M. S. " Scott " Class. (Flotilla Leaders.) Admiralty Design 1916

From paper by Sir E. H .T d'Eyncourt, ' Transactions ' Institution of Naval Architects, Volume LXI, 1919.

construction for the United States navy subsequent to April 1917. The maximum speed developed by some of the latter types of these vessels in the British navy was within a fraction of 40 knots an hour, while all of the later vessels of this type contracted for on account of the United States navy had a designed speed of 35 knots an hour and have made considerably more than this speed on their trials. Not only did these vessels undergo a great development in speed but their offensive armament was greatly increased, being, for the latest vessels of the United States navy, four four-inch, 50-calibre guns and four triple deck tubes carrying 12 torpedoes. In addition, there is one three-inch anti-aircraft gun and a large supply of depth charges, with suitable firing apparatus.



U. S. S. Paulding — Earlier type destroyer.
For dimensions and characteristics of vessel, see Table I.

For the British navy there has been developed a type of vessel called flotilla leader. These vessels are enlarged destroyers and carry a main battery of five 4.7-inch guns. There are also six 21-inch torpedo tubes. The speed and endurance of these latest flotilla leaders are also superior to those of preceding destroyers. They are, in effect, light, high-speed cruisers. Particulars of destroyers recently designed for the various principal navies are given in Tables I to VIII. There are given below the principal characteristics of the latest American and British destroyers:

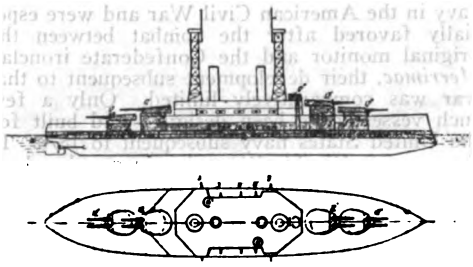
	British "V" and "W" Classes	U. S. Destroyers 345 to 347
Length between perpendiculars	300 ft. 0 in.	310 ft. 0 in
Length overall	312 ft. 0 in.	314 ft. 4½ in
Breadth, extreme	29 ft. 6 in.	31 ft. 8¼ in.
Load draught, mean	9 ft. 0 in.	9 ft. 3¼ in.
Displacement in tons	1,300	1,200
Shaft horse-power of engines	27,000	27,000
Speed at load draught (knots)	34 knots	35 knots.

Armament, British "V" and "W" Classes:
Four 4-inch or 4.7-inch guns.
One 3-inch.
Four or six 21-inch torpedo tubes.

Armament, U. S. Destroyers 345 to 347:
Four 4-inch guns.
One 3-inch anti-aircraft gun.
Four 21-inch torpedo tubes.

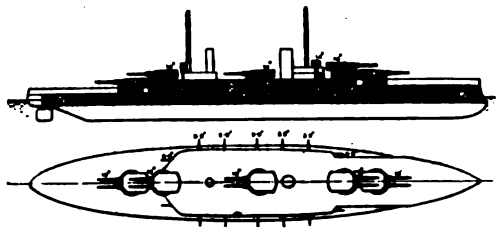
The Monitors.— The monitor is a special type of vessel, the development of which was first undertaken in the United States during the Civil War in 1861. The essential features of this type were, in the beginning, the carrying of a very heavy battery, having an extensive arc of fire, on a hull of comparatively shallow draft and with a minimum of freeboard. This permitted operation in shallow waters and offered the minimum target. While monitors were used extensively by the United States navy in the American Civil War and were especially favored after the combat between the original monitor and the Confederate ironclad *Merrimac*, their development subsequent to that war was comparatively limited. Only a few such vessels have been designed and built for the United States navy subsequent to 1870. In the recent World War, however, the long reaches of shoal water off the Belgian coast made the development of this class of vessel imperative in order to make possible the most effective co-operation of the navy with the land forces. On the Belgian coast they were especially valuable in attacking the powerful land defenses installed by the Germans on that coast and in combatting the efforts of the enemy to thoroughly protect their submarine bases in that vicinity. This resulted in the development of several types of shallow draft monitors. The peculiar conditions in the English Channel and the North Sea and in the eastern Mediterranean thus gave great stimulus to the development of the monitor type. While the building of this type of vessel during the American Civil War may be regarded as the beginning of the monitor development, subsequent improvements in ordnance permitted the offensive power of this class of vessels to be enormously increased over that existing in the earlier types designed for the United States navy. Moreover, the low freeboard deemed essential in the earlier designs was practically abandoned in the very heavily armed vessels of the British navy designed primarily for operations against the Belgian coast. Here again local conditions and the special service to be performed had a controlling influence on the design.

Of course, any type of vessel designed under the great pressure existing during the World War — where rapid completion and entry into active service were of vital consequence — embodied in its design and equipment some makeshifts. This was particularly the case in providing the battery and propelling machinery for the British monitors, the selection of these essential elements being based largely upon available supplies of ordnance and propelling machinery. As a matter of fact, the equipment of older vessels or those in a less advanced state of completion was heavily drawn upon for this purpose. Moreover, provision had to be made in these later monitor designs for satisfactory protection against recent great developments in torpedo attack, as well as making effective provision against damage resulting from attack with mines in mine-strewn areas. The most effective provision against serious damage by mine and torpedo attack proved to be through the addition of substantial bulges for a considerable portion of the length, or else the provision of large wing compartments in the hull structure itself. The first method found greatest favor in these monitor designs, and this defense against torpedo and mine attack was found to



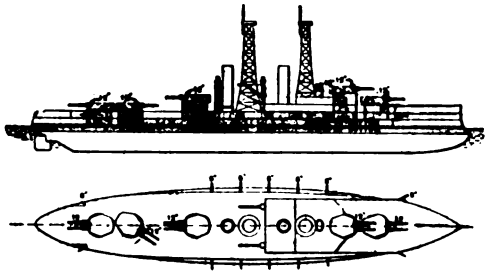
United States Battleship of the Michigan Class

Length 450 ft.; 16,000 tons; speed 18.8 knots; armament 8–12 in., 14–3 in., 2–3 in., A.A., 6 small. Completed 1909.



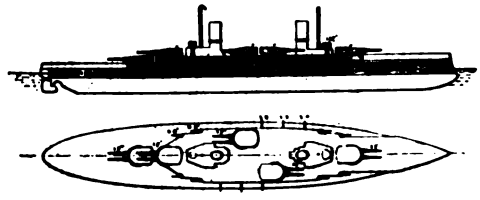
German Battleship of the König Class

Length on W. L. 573½ ft.; 25,390 tons; speed 21 knots; armament 10–12 in., 14–5.9 in., 4–3.4 in. Completed 1914–15.



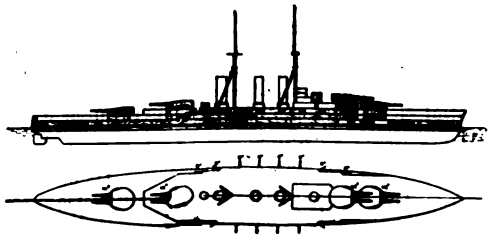
United States Battleship of the Delaware Class

Delaware
North Dakota
} Length 510 ft.; 20,000 tons; speed 21 knots; armament 10–12 in., 14–5 in., 2–3 in. A.A., 16 small.



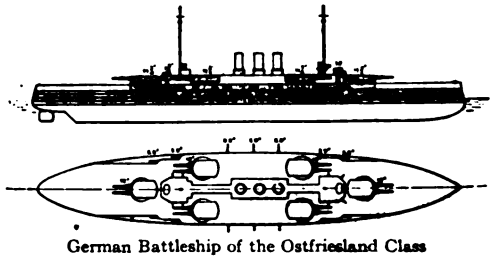
German Battleship of the Kaiser Class

Length on W. L. 564 ft.; 24,310 tons; speed 21 knots; armament 10–12 in., 14–5.9 in., 2–3.4 in. Completed 1912–13.



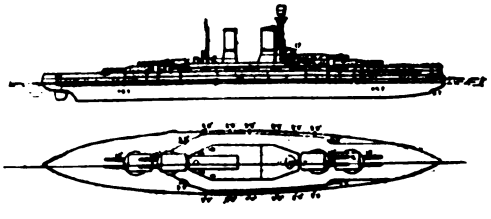
Japanese Battle Cruiser, Kongo Class

Length 704 ft.; 27,500 tons; speed 27 knots; armament 8–14 in., 16–6 in., 18 small. Completed 1913–1916.



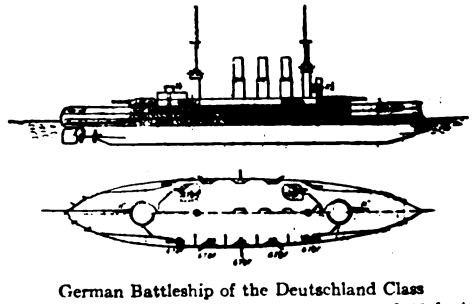
German Battleship of the Ostfriesland Class

Length on W. L., 546 ft.; 22,440 tons; speed 20.5 knots; armament 12–12 in., 14–5.9 in., 2 or 4–3.4 in. Completed 1911–1912.



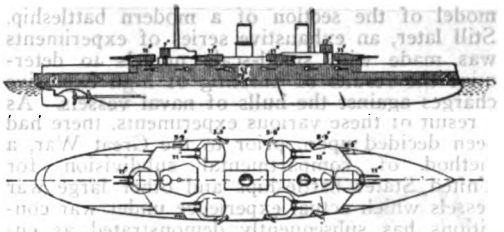
German Battleship, Bayern Class

Length (L. W. L.) 623½ ft.; 28,000 tons; speed 22 knots armament 8–15 in., 16–5.9 in., 4–3.4 in., A.A.



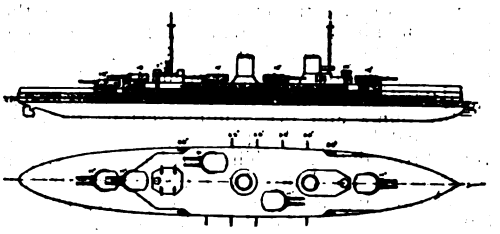
German Battleship of the Deutschland Class

Length (B. P.) 398½ ft.; 13,040 tons; speed 19 knots; armament 4–11 in., 14–6.7 in., 2–3.4 in., 2 M.



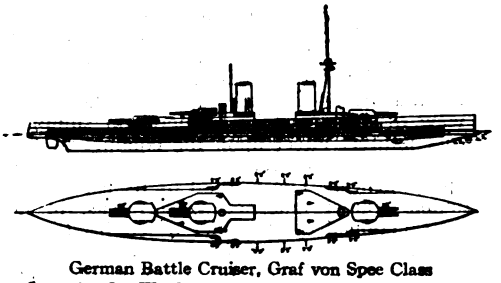
German Battleship of the Nassau Class

Length (L. W. L.) 452 ft.; 18,600 tons; speed 20 knots; armament 12–11 in., 12–5.9 in., 2 or 4–3.4 in. Completed 1909–1910.



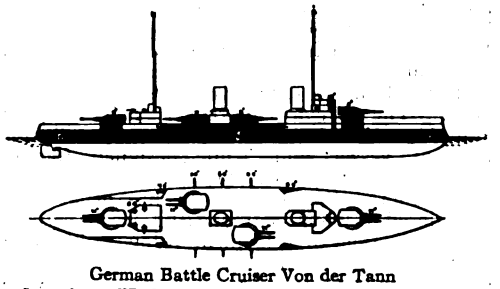
German Battle Cruiser of the Moltke Class

Length W. L. 610 ft., 22,640 tons; speed 27.25 knots; armament 10–11 in., 12–5.9 in., 2–3.4 in. Completed 1911–12.



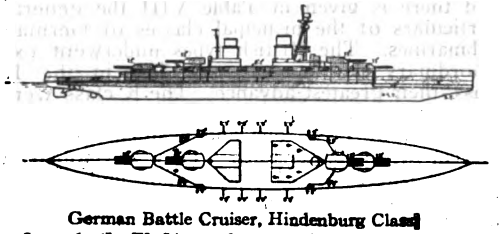
German Battle Cruiser, Graf von Spee Class

Length (L. W. L.) 715½ ft.; 27,000 tons; armament 6–15 in., 14–5.9 in., 8–3.4 in. A.A.



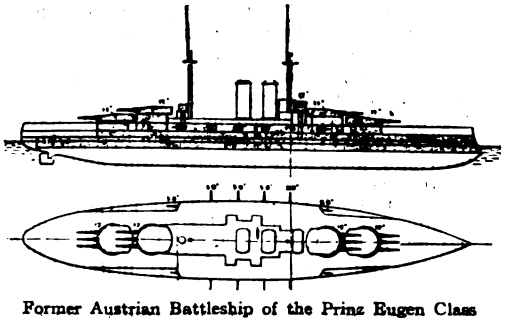
German Battle Cruiser Von der Tann

Length on W. L. 563 ft.; 19,100 tons; speed 26 knots; armament 8–11 in., 10–5.9 in., 4–3.4 in. A.A., 2 M. Completed 1911.



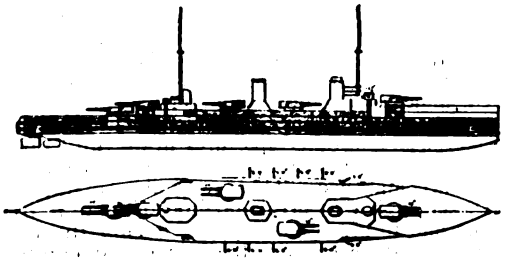
German Battle Cruiser, Hindenburg Class

Length (L. W. L) 689 ft.; 26,200 tons; speed 28 knots; armament 8–12 in., 16–5.9 in., 8–3.4 in. A.A. Completed 1917–18.



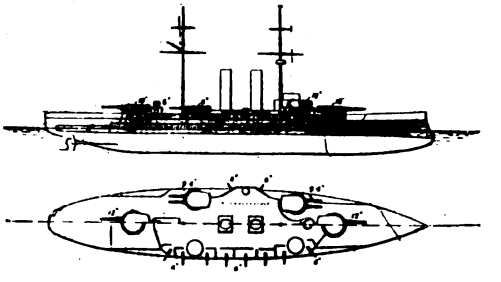
Former Austrian Battleship of the Prinz Eugen Class

Length 495 ft.; 20,000 tons; speed 20.7 knots; armament 12–12 in., 12–5.9 in., 18–12 or.. 6 small. Completed 1913 and building.



German Battle Cruiser Seydlitz

Length on W. L. 656 ft.; 24,610 tons; speed 26.75 knots; armament 10–11 in., 12–5.9 in., 2–3.4 in. Completed 1913.



Former Austrian Battleship of the Ersherzog Franz Ferdinand Class

Length 451 ft.; 14,226 tons; speed 20.5 knots; armament 4–12 in., 8–9.4 in., 20–3.9 in., 6–12 pr., 2 small. Completed 1910–1911.

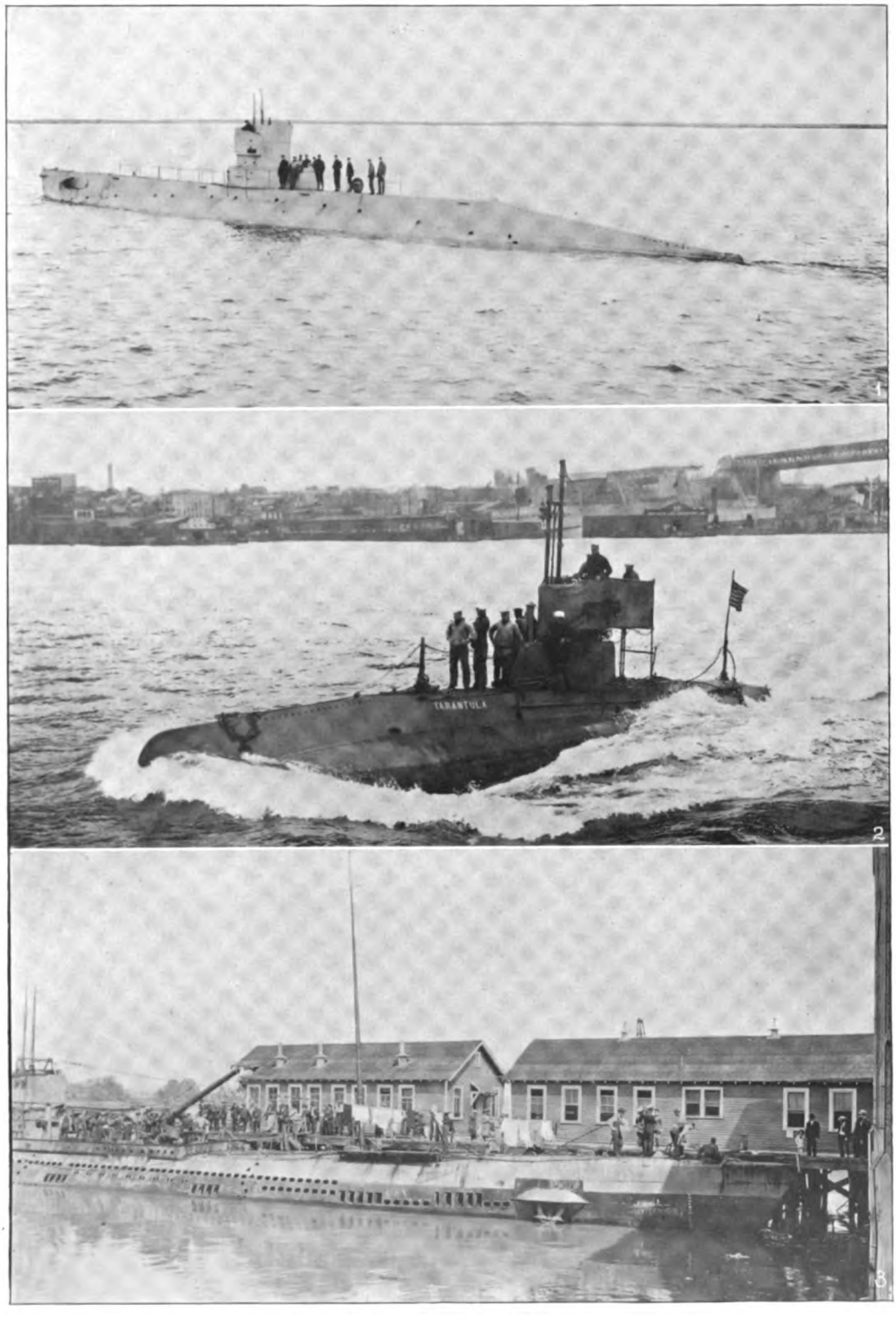
be most effective in actual service. Two of the largest monitors, the *Erebus* and *Terror,* were torpedoed during off-shore operations. The *Terror* received three torpedo wounds in the forward portion of the vessel, two being forward of the bulge and occasioning serious damage. The third hit was on the bulge itself and did very little damage. The *Erebus* was struck squarely on the bulge by a distance-controlled vessel carrying a very heavy explosive charge, but the bulge prevented the loss of the vessel, and the vessel itself was repaired in less than two weeks.

Table IX, which appears in another portion of this article, gives the principal characteristics of the various monitor classes designed for the British navy during the Great War. It will be noted that the two largest classes, represented by the *Erebus* and *Marshall Soult,* carried two 15-inch guns each in the main battery and had very considerable armor protection for the hull, with much more extensive protection for the guns. The *Erebus,* moreover, had a speed quite beyond that associated ordinarily with this type of vessel, and, while designed for 12 knots, was actually capable of a service speed of 14 knots. Speed, however, has never been considered a vital characteristic in vessels of this class, their development being rather that of powerful, well protected, floating batteries. One of the notable features in connection with the design and building of the original monitor in 1861–62 was speed of construction. Rapidity of design and construction was also notable in connection with the construction of these later shallow-draft monitors, some of the largest of which were designed and completed in less than six months. In connection with the development of the monitor type of vessels and the special provision for resisting torpedo attack, it may be noted that, about 12 years ago, extensive experiments were conducted by the United States Navy Department to determine the best method of providing protection for battleships and other large vessels against torpedo attack. The vessel selected for this experimental purpose was the shallow-draft monitor *Florida* (subsequently renamed *Tallahassee*). Special under-water compartmental subdivision was installed in wake of the magazine spaces, and this vessel, under actual experimental conditions, was anchored in shallow water and subjected to many attacks by torpedoes at close range. Various conditions of compartmental filling were adopted for the various protective compartments, namely, inner compartment filled with coal or water, next outer compartment and wing compartment being empty. Variations were then made as to the compartments filled or empty in order to furnish complete experimental data. As observers were on board the vessel and fairly close to the point of impact of these torpedoes, the most complete information was obtained, not only as to the local effect upon the hull of the vessel, but as to the dynamic effect upon the vessel as a whole. These experiments showed conclusively the practicability of limiting the damage created by the explosion against the under-water hull of a vessel of a torpedo or mine with large, bursting charge. Later on, additional experiments of this general character were conducted on another United States naval vessel, and an elaborate series of experiments was conducted with a full-size model of the section of a modern battleship. Still later, an exhaustive series of experiments was made with small-scale models to determine the results of bursting of high explosive charges against the hulls of naval vessels. As a result of these various experiments, there had been decided upon, prior to the Great War, a method of compartmental subdivision for United States battleships and other large war vessels which actual experience under war conditions has subsequently demonstrated as entirely correct in principle. There are advantages and disadvantages connected with the bulge form of protection as compared with extensive wing compartments incorporated in the actual form of the ship. It is worthy of note, however, that while the bulge involves a greater decrease in speed than would be the case with wing compartments in the ship itself, it has the advantage of largely confining the action of gases from an exploding shell to spaces external to the main hull of the vessel.

Submarines.—Considered from the point of view of damage done to merchant shipping and its indirect effect upon the conduct of the war, the submarine occupies a position of especial prominence. The method of its use by the Germans against unarmed vessels was, in no sense, sanctioned by the rules of civilized warfare, but the effect upon military and naval operations in general was, for a considerable period of the war, most important. The development of this type of vessel is, therefore, especially interesting. As the submarines of the British and German navies bore the most conspicuous part in submarine warfare, comment will be largely confined to brief allusion to the development of this type of vessel in those two navies. In Tables II and IX, already referred to, are given particulars of British submarines, and there is given in Table VIII the general particulars of the principal classes of German submarines. The British types underwent extraordinary development, reaching, in the K class, their greatest advance. The K class were really submarine cruisers, having a surface displacement of 1,880 tons and a submerged displacement of 2,650 tons. They developed a surface speed of 24 knots and, under submerged conditions, a speed of nine knots. The armament consisted of one four-inch high-powered gun and one three-inch high angle gun. They were also equipped with eight 18-inch torpedo tubes.

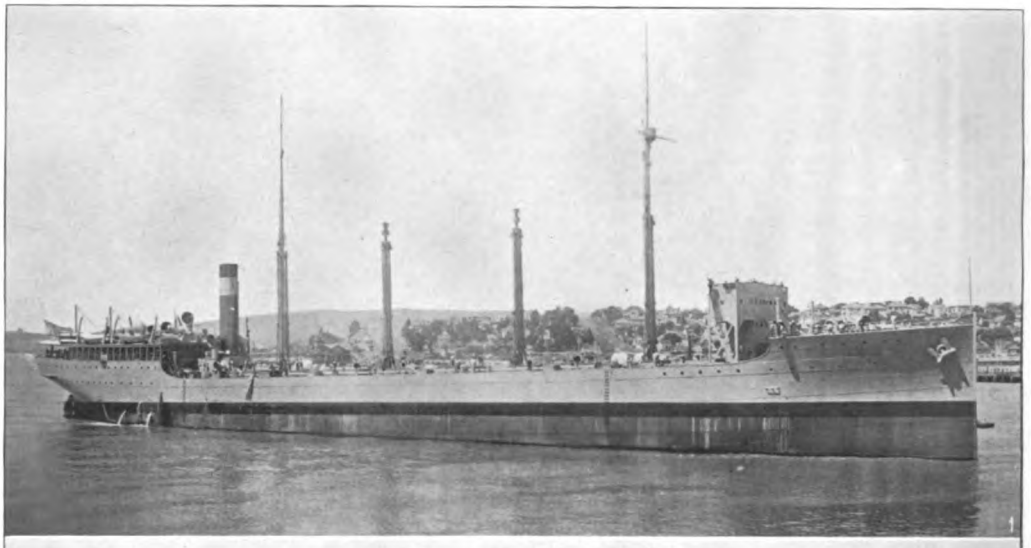
The development of the cruiser type of submarine, represented by the K class of the British navy, made advisable the use of three separate types of propelling machinery. The high power required for the surface speed of 24 knots indicated the advisability of a steam drive Therefore, after thorough consideration, steam turbines developing 10,000 horse power were installed for this purpose. This necessitated, under submerged conditions, special provision for making watertight the openings for smokestacks and other apertures in the hull due to this type of machinery. This was satisfactorily accomplished. There was also installed a Diesel engine to accelerate the operation of diving and to give greater power during the intermediate stage between the submerged condition and the surface condition. The main reliance for submerged propulsion was the usual storage batterly electric drive. The success of

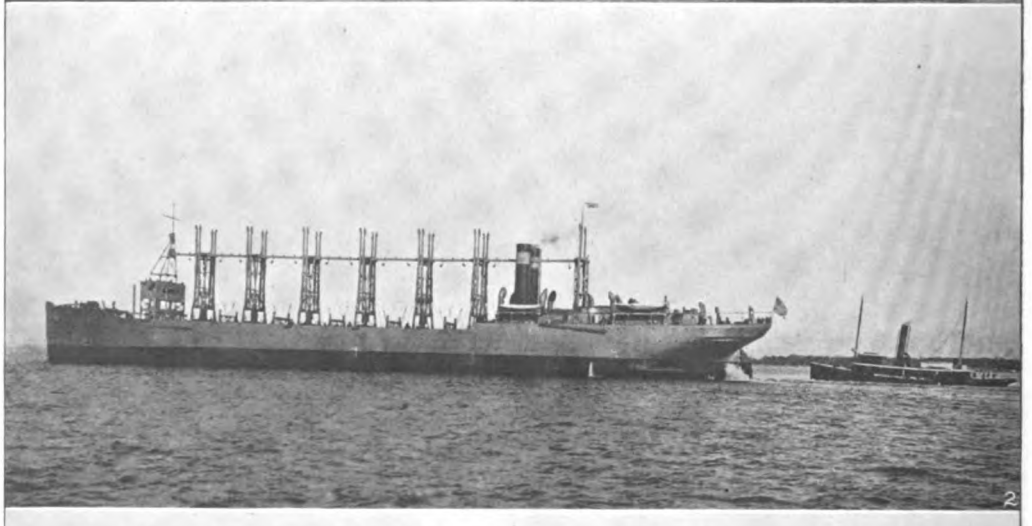
MODERN WARSHIPS



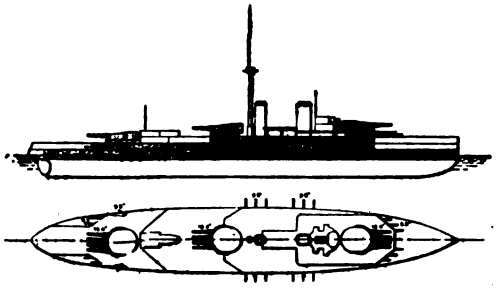
1 United States Submarine R-1

2 Earliest type United States Submarine B-3, formerly the Tarantula
3 German Submarine U-117



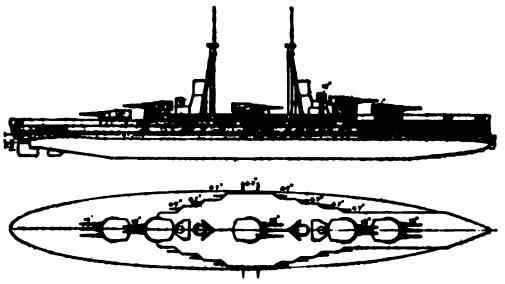


1 U. S. S. Kanawha — Fuel Ship No. 13 2 U. S. S. Jason — Fuel Ship No. 12
3 U. S. S. Melville — Destroyer Tender No. 2



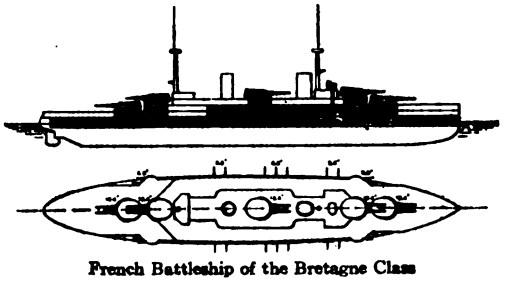
French Battleship of the Normandie Class

Length 574 ft.; 25,230 tons; speed 21 knots; armament 12–13.4 in., 24–5.5 in., 4–3 pr.



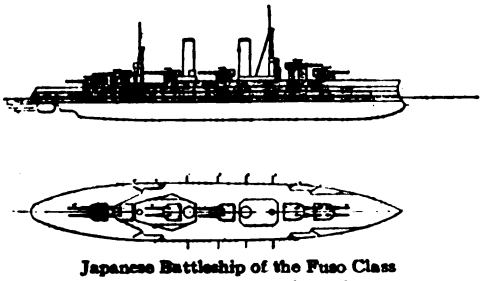
Italian Battleship of the Conte di Cavour Class

Length 557 ft.; 22,340 tons; speed 22.5–23 knots; armament 13–12 in., 18–4.7 in., 14–12 pr. Completed 1914–1915.



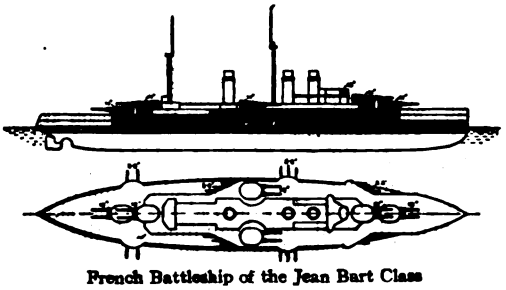
French Battleship of the Bretagne Class

Length 546 ft.; 23,177 tons; speed 20 knots; armament 10–13.4 in., 22–5.5 in., 8 small.



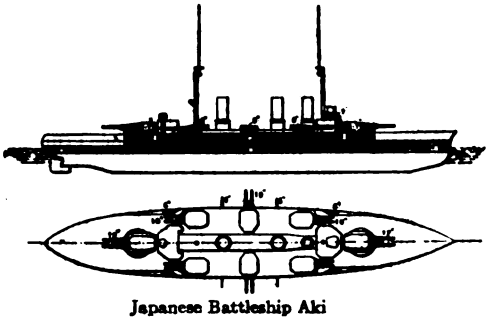
Japanese Battleship of the Fuso Class

Length 658 ft.; 31,000 tons; speed 22.5 knots; armament 12–14 in., 16–6 in., 4–12 pr. Completed 1915–1918.



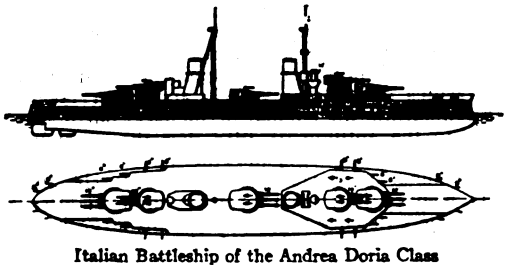
French Battleship of the Jean Bart Class

Length 546 ft.; 23,100 tons; speed 20 knots; armament 12–12 in., 22–5.5 in., 4–3 pr. Completed 1913–1914.



Japanese Battleship Aki

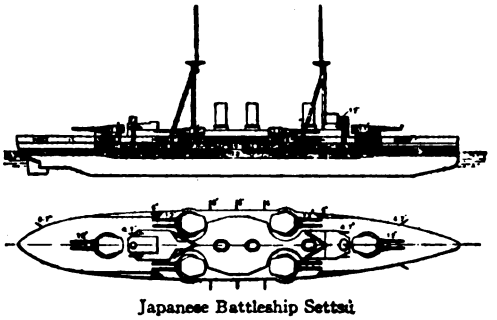
Length 400 ft.; 19,800 tons; speed 20.5 knots; armament 4–12 in., 12–10 in., 8–6 in., 8–12 pr., 8 small. Completed 1911.



Italian Battleship of the Andrea Doria Class

Length 570 ft.; 23,025 tons; speed 23 knots; armament 13–12 in., 16–6 in., 14–12 pr., 6 small. Completed 1915.

N. B. In the next succeeding class, Francesco Morosini, Caracciolo, Cristoforo Colombo and Marcantonio Colonna, eight 15 inch guns are mounted in four turrets on the middle line, as in the Queen Elizabeth.



Japanese Battleship Settsu

Length 500 ft., 20,800 tons; speed 20.5 knots; armament 12–12 in., 10–6 in., 8–4.7 in., 16 small. Completed 1912.

this unusual combination of propelling machinery was reported to have been complete.

The J class, which immediately preceded the K class of British submarines, had a surface speed of 19 knots, a surface displacement of 1,210 tons, a submerged displacement of 1,820 tons, and a battery generally similar to the K's. These developments in submarine construction represent an extraordinary advance over the earlier classes and a very marked improvement over even the E class of British submarines. These last-named vessels had a length of 180 feet, a submerged displacement of 800 tons, a surface speed of 15 knots, and a submerged speed of 10 knots. They carried one three-inch gun and five 18-inch torpedo tubes. One other class of submarine which was developed as a result of the Great War is represented by the M class of British submarines. These vessels, only one of which has been reported as actually built up to the present time, had a designed submerged displacement of approximately 2,000 tons and carried one 12-inch, 35 calibre gun. The mounting of this gun was necessarily of a special type and the training of the gun was necessarily dependent on the manœuvring of the vessel. This type of vessel is somewhat of an experimental character and has never, so far as reported, been in actual service, so that it is impossible to make positive statement concerning its probable success in actual service. There is little doubt, however, that, under certain conditions, it would have proved a valuable adjunct to the fighting fleet.

In the German navy the development of the submarine, both in types and numbers, was very great, but with results not altogether satisfactory from the point of view of speed and habitability. The Germans, however, developed the offensive powers of the submarine to a very great extent, especially with a view to operating against merchantmen, both armed and unarmed. They also developed to a high degree the mine-laying type of submarine; also the cruising cargo submarine. This last type was not put to any great practical use and was subsequently converted into a mine layer. The great damage to merchant shipping accomplished by the German submarine has created an impression in some quarters of unusual superiority for the type developed by them. That this is not supported by the facts is evident from the following quotation from a statement recently issued by the United States Navy Department, comparing one of the latest types of German submarines with one of the latest types of United States submarines which had then completed its official trials:

New and interesting light is thrown on the efficiency of the German submarines by recent tests conducted by officers in the Bureau of Construction and Repair. An opportunity recently developed in this country which permitted a direct comparison between a late design of German submarine and a late design of American submarine. While details of the comparative tests cannot be given, sufficient information is available to destroy the much-advertised superiority of the German submarine. As is well known, five German submarines of the latest design were brought to the United States for use in the Victory Loan campaign. Four of these boats came over under their own power, manned by officers and men of the United States navy. The propulsive machinery of the fifth was partially destroyed or removed so that it was necessary to tow this vessel across. The best of these German boats was "tuned up" for special trials. When reported ready for these trials a special trial board was designated to conduct the trials, following the established practice in carrying out contract trials for submarines of the United States navy. The boats compared were ex-German submarine U-111 built at the Germania Yard, Kiel, Germany (completed in 1918) and S-3 a submarine designed by the Navy Department; S-3 was built at the Portsmouth Navy Yard and was commissioned in 1918.

These boats both belong to the "800 ton class"— U-111 having a surface displacement of 830 tons and S-3 a surface displacement of 854 tons.

Dimensions.

	U-111	S-3
Length	235 ft.	231 ft.
Beam	21 ft.	21.5 ft.
Draft	12.5 ft.	12.5 ft.

In the trials the maximum surface speed of the U-111 was 13.8 knots while the S-3 made 14.7 knots. The submerged speed of U-111 was 7.8 knots while S-3 made 12.4 — a remarkable difference in favor of S-3. The radius of action of the two boats is also in favor of S-3, despite all the furor that was created by the advent of the German U-boat on American coasts during the war.

U-111 can cruise 8,500 miles at 8 knots, while S-3 can cover 10,000 miles at 11 knots. The submerged cruising radius shows an equal preponderance in favor of S-3. Both boats can carry 12 torpedoes. U-111 mounts two 4 in. guns, one forward and one aft, while S-3 mounts one 4 in. gun forward, this practice of one gun on a submarine being standard practice in the United States navy. So much for the ordinary military characteristics of the vessels. It is necessary to really live in these vessels to appreciate the radical difference in their habitability, a vital military characteristic, for a submarine is no better than its crew. U-111 is congested to the last degree; she is complicated in the extreme by the installation of many "gadgets", some of which are of doubtful utility and more doubtful necessity. Accessibility to her equipment is very difficult; frequently it is necessary to take down three installations to overhaul one. On the contrary S-3 is a habitable, livable proposition; comparatively "roomy" with reasonable accommodation for officers and crew. Her equipment is accessible and her general habitability is vastly superior to U-111. Much has been written of the seaworthiness of the German U-boat. An opportunity to compare the seagoing capabilities of the two vessels occurred during these trials and the general consensus of opinion among the officers conducting the test is that S-3 is the more seaworthy vessel. Her decks are drier, her bridge less subject to green seas, and her general behavior in a seaway superior. Referring to the comparative diving capabilities of the two vessels and general handling there are few differences and those few appear to favor S-3. In their reports of the outcome of the comparative tests the Bureau officers point out that there should be no idea that "we have nothing to learn from the Germans." There are a number of interesting details in design, construction and in operation that are well worth while studying. A few features are worthy of adoption for the U-111 is the" mittel U-boat," which type is considered by the Germans as, by far, their best submarine.

Nothing so clearly indicates the rapid and extensive development of the submarine during the recent World War period than the simple statement that, at the beginning of the war, Germany had less than 40 submarines, while during the period of hostilities it actually built or had in process of construction at the time of signing the armistice more than 600 additional vessels of this class. Although the Germans lost rather more than 200 of these submarines during the war, they succeeded in destroying approximately 15,000,000 tons of shipping, involving the loss of more than 16,000 lives. The development of the submarine in Germany was accompanied, however, by rapid development by the Allies of suitable vessels and other means of combatting the submarine menace, but it was only in the autumn of 1918 that the construction of new tonnage and the development of anti-submarine measures showed clearly that this menace had been brought under control. That the existence and operation in large numbers of enemy submarines had a most material bearing upon the manœuvres of the Allied fleet is amply evidenced by reports of fleet commanders during the war period. They also exercised an important influence on the design of capital ships so far as related to the provision of protection against under-water torpedo at-

tack. As is well known, during a great part of the war, German naval energy was concentrated on providing and operating submarines, thus making this particular type of naval vessel of predominant consequence to them in the prosecution of the naval side of the war. In view of the important part recently played by the German submarine, the following quotation is made from a paper contributed to the transactions of an American scientific society by an officer who had unusual opportunities for observation and whose comments upon this subject have authoritative value:

All modern German submarines are of the double hull type. The war produced three standard types of German submarines which are known as the UC type, the UB type and the U boat or "mittel U-boat." In addition to the standard types, there were two special types, as follows:— UE type, mine-laying cruisers; UA type, large cruiser class. The large cruiser class consists of two designs, the ordinary design being a vessel of about 2,000 tons surface displacement, while there were a few of the special cruiser design of about 1,200 tons surface displacement. There were apparently only two vessels in this class completed, and they were especially designed for surface speed.

The UC class is made up of small, coastal, mine-laying submarines. This class has a surface displacement of about 500 tons and a submerged displacement of about 575 tons. These vessels in their latest development are about 185 feet long, 18 feet beam, and 12 feet draught. They made about 11½ to 12 knots on the surface and 6 to 7½ knots submerged. The mines were carried in the forward part of the vessel in non-watertight compartments or mine wells, 18 mines being usually carried, although some of the designs carried only 12. A torpedo tube was fitted in the stern and two torpedo tubes were fitted externally in the superstructure, sometimes forward and sometimes abaft the conning-tower. They usually carried one 10.5 or one 8.8-cm. gun. There were about 100 of these boats completed and a great many more in the course of construction.

The UB class of vessels formed the coastal submarines and were vessels of about 520 tons surface displacement and 650 tons submerged. They were 183 feet long, 19 feet beam and 12 feet draught. They had a surface speed of about 13½ knots and a submerged speed of 7½ to 8 knots. Four torpedo tubes were installed in the bow and one in the stern. They usually carried one 10.5-cm. gun; no mines were carried on the UB class.

It is of particular interest to note that the UB class and the UC class in the final analysis were very similar in size and displacement. An examination of the boats of these classes in Germany in December, 1918, showed very completely the progressive steps made in the design and construction of these types of vessels. The earlier UB boats and UC boats only displaced about 125 to 150 tons each. It was very soon demonstrated that these boats were too small for the purpose intended, and when standardization took place it resulted in boats as indicated above. There were about 140 UB boats completed and many more under construction at the time the armistice was signed.

U-boat —"Mittel U-boats."— The first boat of this class was completed in 1906 and had a surface displacement of 238 tons. The increase in the size of this type of submarine continued through various progressive stages until 1914, when the displacement had reached about 760 tons. The "mittel U-boats" subsequent to this date were generally similar in design except that the displacement increased slightly so that the latest type had a surface displacement of about 830 tons. The standard design of "mittel U-boats" has about the following characteristics*:

Surface displacement	830 tons.
Submerged displacement	1,030 tons.
Length	235 feet.
Beam	20½ feet.
Draft	12½ feet.

Designed surface speed, about 16 knots.
Actual surface speed, about 15 knots.
Designed submerged speed, about 8½ knots.
Actual submerged speed, about 8 knots or less.

Most of the "mittel U-boats" were fitted with four bow torpedo tubes and two stern torpedo tubes. They carried either one or two 4.1-inch guns. This type of boat was considered the most successful of the German submarines, and many of the German service consider that, if they had adhered to this type of vessel, they would have been more successful in their submarine warfare. The Germans had completed at the time of the armistice about 110 of these vessels; a large number were also under construction in various parts of Germany.

UE Class.— These were large ocean-going, mine-laying cruisers of:

Surface displacement, about	1,200 tons.
Submerged displacement	1,520 tons.
Length	275 feet.
Beam	24 feet.
Draft	13 feet.

Designed surface speed, 14.7 knots.
Designed submerged speed, 7.2 knots.

Armament, 4 bow torpedo tubes; 2 stern mine tubes, 39 inches in diameter.

Stowage space was available for 42 mines and 24 torpedoes. It is doubtful whether these vessels carried this number of spares. Their gun armament consisted of one 5.9-inch gun and one 4.1-inch, although in some cases they may have carried two 5.9-inch guns. Usually only one gun was carried.

There were about 10 of this class completed and a large number building. U-71–80 were small mine-laying submarines of this general type but of an earlier design, and only displaced about 760 tons. They were not a successful design.

Cruiser Class — UA Type.— Of the special cruiser class there appear to have been completed only two boats — U-135 and 136. Their displacement is similar to the mine-laying cruiser class, that is:

Surface displacement	1,200 tons.
Submerged displacement	1,535 tons.
Length	275 feet.
Beam	24½ feet.
Draft	13 feet.
Designed surface speed	18 knots.
Designed submerged speed	8.2 knots.

They had four bow tubes and two stern tubes and carried one 5.9-inch gun.

The large cruiser class consisted of vessels of the following characteristics: —

Surface displacement, about	2,000 tons.
Submerged displacement	2,500 tons.
Length	302 feet.
Beam	29½ feet.
Draft	17 feet.

They carried four bow tubes, two stern tubes and 19 torpedoes. They had a designed surface speed of 15.8 knots and a designed submerged speed of 7.7 knots. Only four of these boats were actually completed at the time of the armistice, but there were a large number under construction in various parts of Germany.

It is impossible to predict the future of submarines; their development and operation in the Great War indicated their tremendous possibilities. The future alone can determine whether or not it will be possible to restrict the activities of submarines so that in their operation nations at war will fully comply with the laws of nations governing civilized warfare and the special regulations established in times of peace to provide for such compliance. It may be remarked, in this connection, that the operations of enemy submarines in the Great War were largely those of action against unarmed or lightly armed merchant vessels and their use in strictly naval operations was rather restricted. In the earlier stages, their operations were eminently successful, because of their ability to cruise on the surface, to lie in traffic routes and to attack with comparative impunity vessels unarmed or only lightly armed. As soon as it was possible to conduct a rigorous offensive against this type of vessel, their surface operations were greatly limited. The development of mine barrages and, more particularly, the increase in the number of torpedo-boat destroyers carrying large quantities of depth charges and the employment of large numbers of submarine chasers soon rendered the surface operations of this type of vessel, in the vicinity of high-speed, well-armed surface craft exceedingly hazardous. In fact, it may be stated without fear of serious contradiction that the submarine menace at the

* From paper by Commander E. S. Laut, Construction Corps, United States Navy, published in 'Transactions' of Society of Naval Architectural and Marine Engineers (Vol. XXV).

time of the armistice in November 1918 was fairly well under control, and the increasing number of destroyers being put into service at that time would have soon rendered the danger from this class of vessel comparatively small. In conclusion, it is worthy of note that more than 200 German submarines were sunk, captured or driven ashore during the course of the war, this number representing more than 50 per cent of the total number which had been in operation. It is also a fact that the extremely hazardous character of duty in enemy submarines shortly before and at the time of the conclusion of the armistice, due to the increasing efficiency of the offensive operations conducted against them, had produced a marked decline in the morale of the crews of such enemy vessels. This, in itself, became a potent factor in reducing the menace from this type of vessel, and may possibly result in a closer observance of such laws as may hereafter be established for the control of submarine warfare in any future operations of war in which such vessels may be engaged.

Submarine Chasers.—A type of vessel for which submarine operations were distinctly responsible was the submarine chaser class. These were small, moderate-speed, lightly-armed vessels whose main object was to act as scout patrols and to locate and attack enemy submarines. Their speed, while not great, was superior to that of the large majority of submarines. This special type in the United States navy was represented by a class of nearly 450 vessels. They had an armament of one three-inch gun, two machine guns and a Y-gun for depth charges. This permitted them to operate effectively against enemy submarines. Their principal dimensions were as follows:

Length (between perpendicular)	105 feet.
Length, overall	110 feet.
Breadth (W.L.)	14 feet 8½ inches.
Draft	5 feet 5½ inches.
Displacement (normal)	77 tons.
Displacement (full load)	85 tons.
Speed	18 knots.

More than 100 of another type of submarine chaser and scout patrol were under construction for the United States navy at the time of the signing of the armistice, and extensive arrangements had been made to build this type in very large quantities if the continuance of the war and the effectiveness of enemy submarine operations had justified such an extension of the building program. These vessels, called the "Eagle" class, were very much larger than the type of submarine chaser just mentioned, their principal characteristics being as follows:

Length (between perpendicular)	200 feet.
Length, overall	200 feet, 9 inches.
Breadth (W.L.)	25 feet, 6 inches.
Mean draft	7 feet, 3 inches.
Displacement (normal)	500 tons.
Displacement (full load)	615 tons.
Speed	18 knots.

Battery:
Two 4-inch, 50 cal. R. F. guns.
One three-inch, 50 cal. anti-aircraft gun.
Two machine guns.
One Y-gun for firing depth charges.

Being much larger and more effectively armed than the first type of submarine chaser, they would undoubtedly have proved themselves effective vessels for the class of work for which designed, and their simple type of construction would have permitted prompt and extensive additions to the fleet originally contracted for, had the exigencies of war necessitated such additions.

Mine Sweepers and Mine Layers.— Vessels of this class may not be regarded ordinarily as warships. As a matter of fact, however, a large number of specially designed mine sweepers were employed during the Great War, although the vast majority of such vessels were improvised from seagoing tugs, trawlers and other vessels of that general character. They were, however, lightly armed and performed such notable service in strictly naval operations that they are at least entitled to mention in an article on warships. The type of vessel of this class specially designed for the United States navy was of the enlarged seagoing tug order, having a length of 180 feet, a beam of 35 feet 6 inches, a mean draft of 9 feet 9½ inches, and a normal displacement of 950 tons. They were single-screw vessels, with vertical triple expansion engines having a horse power of 1,400 and had a designed speed of 14 knots. They had a battery of two three-inch, 50 calibre anti-aircraft guns and two machine guns.

The mine layers, in almost all cases, consisted of merchant vessels transformed to meet the requirements of the particular service involved. They were also lightly armed in order to permit them to make reasonable resistance against attacks from aircraft and submarines. In view of the improvisation of this type, no attempt will be made to describe the features of any particular vessel.

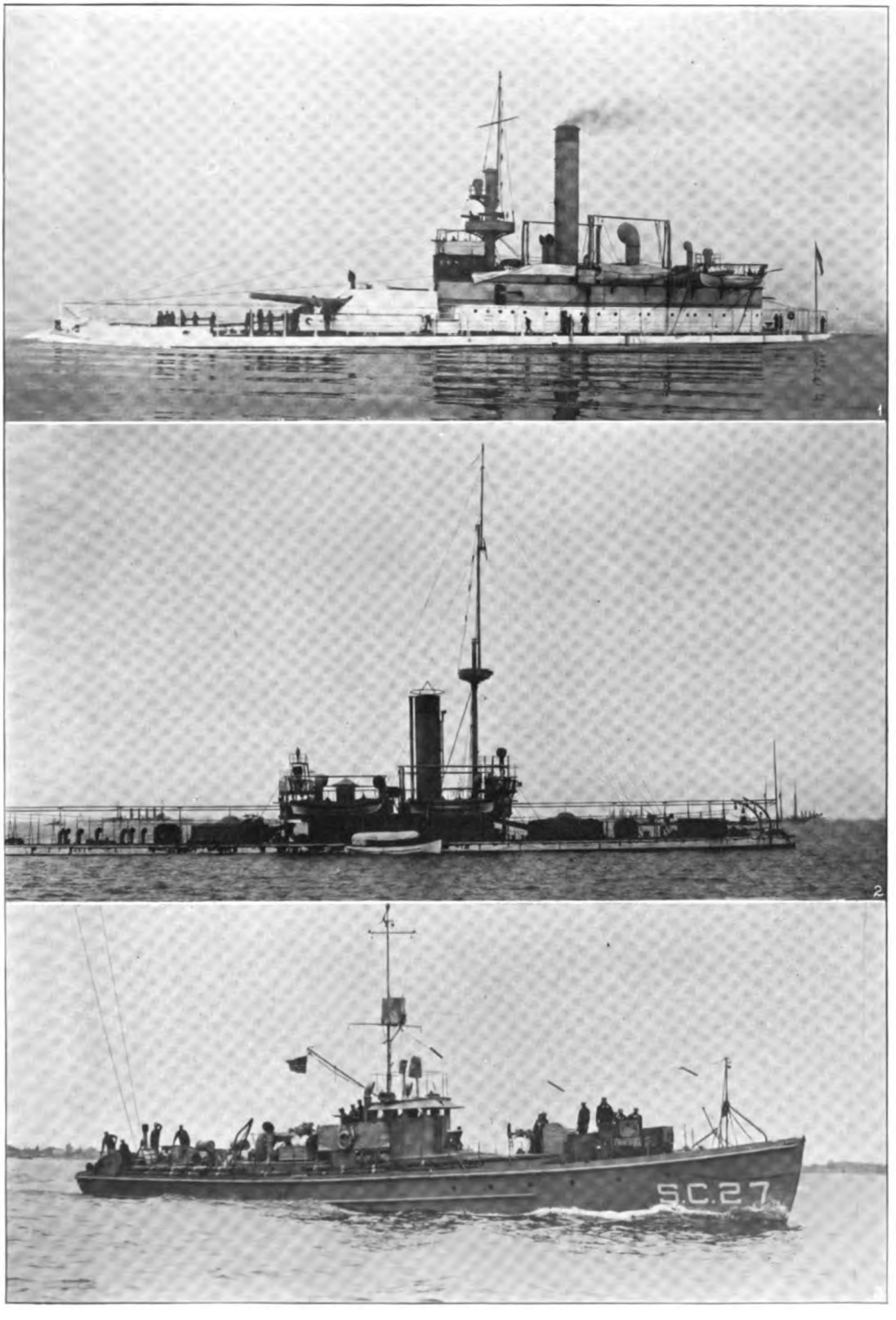
Tables.— In the tables which appear at the end of this article (Tables I to VIII, inclusive), are shown in condensed form the major characteristics of the principal types of vessels in the navies of the United States, Great Britain, France, Italy, Japan, Russia, Germany and Austria. The vessels for which data are given, with the exception of the United States navy, are those which have been completed or designed in the past 10 years.

There are given in Table IX particulars of British warships constructed during the war. This table is taken from a paper prepared by Sir Eustace Tennyson d'Eyncourt, Director of Naval Construction, British Admiralty, for presentation to the British Institution of Naval Architects in April, 1919, and since published.* It is complete and authoritative and shows in graphic form the tremendous development in the strength of the British navy during the World War. There was also taken from this same paper the plans appearing on Plates 38, 39, 40 and 50, 51 and 52. These plans give a good general idea of the compartmental subdivision, battery deck plans, interior arrangements, armor and armament of the following classes of vessels:

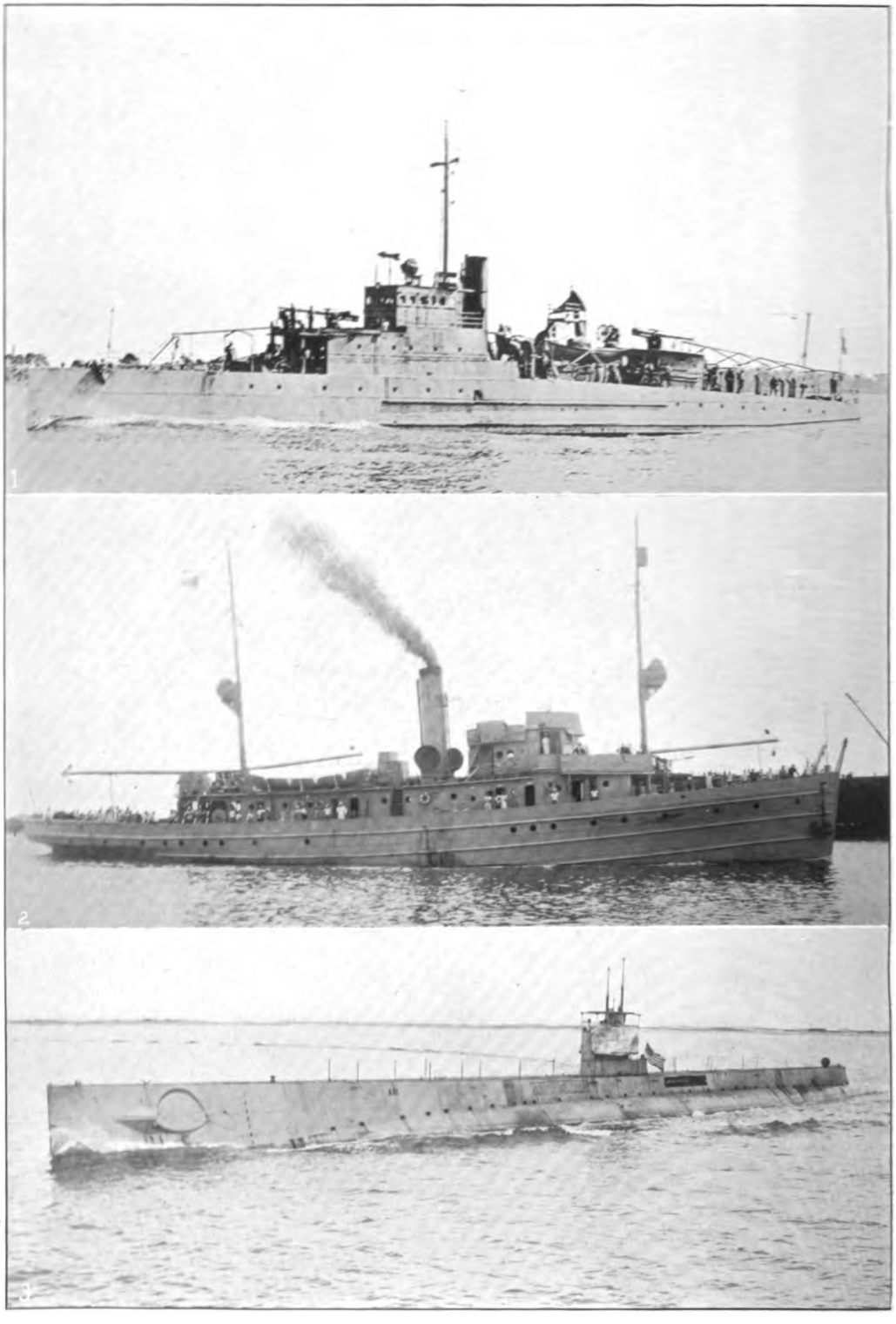
Battleships	*Royal Sovereign* Class, *Agincourt*, *Erin* and *Canada*.
Battle Cruisers	*Repulse* and *Renown*.
Large Light Cruisers	*Courageous* and *Glorious*.
Aircraft Carrier	*Furious*.
Light Cruisers	*Raleigh* Class and *Ceres* Class.
Monitors	*Erebus*, and *Terror* Class, and M-15 to 28, and M-29 to 39.

Also M Class of Destroyers, V Class of Destroyers, and *Scott* Class of Flotilla Leaders.

* 'Transactions' of Institution of Naval Architects (Vol. LXI., 1919).



1 U. S. S. Tallahassee, formerly the Florida
2 United States Monitor Miantonomoh
3 United States Submarine Chaser No. 27



1 United States Submarine Chaser (Eagle Class) 2 U. S. S. Bittern. Mine Sweeper No. 36
3 United States Submarine AA-1. Latest (Fleet) type

While the 'Transactions' of the British Institution of Naval Architects are especially rich in data concerning the development of warship building, the two papers published in the 1919 'Transactions' of that society, one by Sir Philip Watts, late Director of Naval Construction in the British Admiralty, and the other by Sir Eustace Tennyson d'Eyncourt, the present Director of Naval Construction, are particularly replete in data covering the development of the British navy up to the close of the year 1918. In addition, Sir Philip Watts incorporated in his paper very complete statistical data concerning the principal foreign navies, which gives it unusual historical value.

There is given in Table X a summary statement of effective fighting ships built and building, for the countries just enumerated. This table is taken from the 1919 edition of Brassey's Annual.

There are given in Tables XI, XII, XIII, XIV and XV summaries of vessels in the United States navy "fit for service" and "under construction," covering the period from 1 July 1906 to 1 Oct. 1919. These tables have been prepared for an official publication of the United States Navy Department, soon to be issued, and are reproduced by kind permission of the secretary.

Photographs, Silhouettes and Battery Plans.—*Photographs* represent the complete series of United States battleships, battle cruisers and representative vessels of the destroyer, submarine, monitor, submarine chaser and mine-sweeper classes.

The *Silhouettes* give correct profile illustrations of the various types of fighting vessels in the United States navy.

The *Profiles* and *Deck Plans* of United States and foreign vessels give the battery arrangements and armor distribution of the complete series of United States battleships and battle cruisers and the latest battleships and battle cruisers of the navies of Great Britain, France, Italy, Russia, Japan, Germany, Austria. There also have been added profiles and battery plans of the latest and most important battleship additions in the Brazilian and Argentine navies, namely, the *Minas Geraes* and the *Rivadavia*. The first of these battleships was constructed in England for the Brazilian government, while the last-named vessel was constructed in the United States. It may also be noted, in this connection, that the present battleship *Canada* of the British navy and the aircraft *Eagle* of the same navy were originally under construction in England for the Chilean navy, but were taken over by the British admiralty during the Great War.

The thanks of the author are due to the Secretary of the United States Navy for his kind permission to use hitherto unpublished data concerning naval vessels; also to the chiefs of technical bureaus of the United States Navy Department for certain authoritative data obtained from them concerning United States naval vessels, and especially to the chief of the Bureau of Construction and Repair for his most helpful co-operation in obtaining data and suitable illustrative photographs and sketch drawings; also to the technical staff of the Bureau of Construction and Repair, especially the head of the design drawing office and his assistants for the compilation of tabular matter and preparation of sketch plans illustrating the types and characteristics of naval vessels.

The author is also indebted to various foreign admiralties for information derived from their official publications, and also to various scientific and technical societies and technical publications for naval data contained in their latest editions. The principal publications consulted are indicated in the bibliography given below, the author being under special obligations to the British Institution of Naval Architects and Brassey's Annual for the use of some of their plans in illustrating this article.

Bibliography.—Official publications relating to naval vessels published by the United States Navy Department; similar publications of foreign admiralties; Transactions of the American Society of Naval Architects and Marine Engineers, New York; Transactions of the British Institution of Naval Architects, London; Transactions of the Society of Naval Engineers (Washington, D. C.); Proceedings of the United States Naval Institute (Annapolis, Md.); Brassey's *Naval Annual* (London); Jane's 'Fighting Ships' (London); *Scientific American* (New York); *Engineering* (London); *Engineer* (London).

W. L. Capps,
Chief Constructor, United States Navy.

TABLE I

Table Giving Particulars of all United States Battleships Including and Subsequent to Oregon Class

Battleships	Length between perpendiculars	Breadth on load water line	Mean draft	Displacement normal	Speed on trial	Horsepower main engines	Machinery type	Battery			Date of first commission	Complement	
								Main	Secondary and anti-aircraft	Torpedo tubes		Officers	Men
	Ft. In.	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*								
Oregon class, Nos. 1, 2 and 3: Indiana, Oregon, Massachusetts	348 0	69 3	24 0	10,288	15.55	9,498	Vert., 3-exp.	4-13″, 35 cal. 8- 8″, 35 cal.	4-3″, 50 cal.		Nov. 20, 1895	41	810
Iowa, No. 4	360 0	72 2½	24 0	11,346	17.09	11,834	Vert., 3-exp.	4-12″, 35 cal. 8- 8″, 35 cal.	4-4″, 40 cal.		June 16, 1897	41	845
Kearsarge class, Nos. 5 and 6: Kearsarge, Kentucky	368 0	72 2½	23 6	11,520	16.82	11,674	Vert., 3-exp.	4-13″, 35 cal. 4- 8″, 35 cal.	8-5″, 50 cal. 2-3″, 50 cal.*		Feb. 20, 1900	39	853
Illinois class, Nos. 7, 8 and 9: Illinois, Alabama, Wisconsin	368 0	72 2½	23 6	11,552	17.45	12,647	Vert., 3-exp.	4-13″, 35 cal.	8-6″, 40 cal. 2-3″, 50 cal.*		Sept. 16, 1901	43	818
Maine class, Nos. 10, 11 and 12: Maine, Missouri, Ohio	388 0	72 2½	23 10	12,500	18.0	15,214	Vert., 3-exp.	4-12″, 40 cal.	8-6′, 50 cal. 2-3″, 50 cal.*	2-18″ submerged	Dec. 29, 1902	44	916
Virginia class, Nos. 13, 14, 15, 16 and 17: Virginia, Nebraska, Georgia, New Jersey, Rhode Island	435 0	76 2½	23 9	14,948	19.01	22,501	Vert., 3-exp.	4-12″, 40 cal. 8- 8″, 45 cal.	8-3″, 50 cal. 2-3″, 50 cal.*	4-21″ submerged	May 7, 1906	52	1090
Connecticut class, Nos. 18, 19, 20, 21 and 22: Connecticut, Kansas, Louisiana, Minnesota, Vermont	450 0	76 10	24 6	16,000	18.78	19,333	Vert., 3-exp.	4-12″, 45 cal. 8- 8″, 45 cal.	12-3″, 50 cal. 2-3″, 50 cal.*	4-21″ submerged	Sept. 29, 1906	52	1252
New Hampshire, No. 25	450 0	76 10	24 6	16,000	18.16	17,537	Vert., 3-exp.	4-12″, 45 cal. 8- 8″, 45 cal.	12-3″, 50 cal. 2-3″, 50 cal.*	4-21″ submerged	Mar. 19, 1908	52	1292
South Carolina class, Nos. 26 and 27: South Carolina, Michigan	450 0	80 2½	24 6	16,000	18.86	17,651	Vert., 3-exp.	8-12″, 45 cal.	14-3″, 50 cal. 2-3″, 50 cal.*	2-21″ submerged	Mar. 1, 1910	61	1295
Delaware class, Nos. 28 and 29: Delaware, North Dakota	510 0	85 2½	26 11	20,000	21.56	28,578	[1] Vert., 3-exp.	10-12″, 45 cal.	14-5″, 51 cal. 2-3″, 50 cal.*	2-21″ submerged	April 4, 1910	63	1321
Florida class, Nos. 30 and 31: Florida, Utah	510 0	88 2½	28 6	21,825	22.08	40,511	Turbine, direct drive	10-12″, 45 cal.	12-5″, 51 cal. 2-3″, 50 cal.*	2-21″ submerged	Sept. 15, 1911	63	1321
Wyoming class, Nos. 32 and 33: Wyoming, Arkansas	554 0	93 2½	28 6	26,000	21.22	31,437	Turbine, direct drive	12-12″, 50 cal.	16-5″, 51 cal. 2-3″, 50 cal.*	2-21″ submerged	Sept. 25, 1912	65	1529
New York class, Nos. 34 and 35: New York, Texas	565 0	95 2½	28 6	27,000	21.47	29,687	Vert., 3-exp.	10-14″, 45 cal.	16-5″, 51 cal. 2-3″ 50 cal.*	4-21″ submerged	April 15, 1914	63	1482
Nevada class, Nos. 36 and 37: Nevada, Oklahoma	575 0	95 2½	28 6	27,500	20.53	23,312	[2] Turbine, direct drive and cruising reduction gear	10-14″, 45 cal.	12-5″, 51 cal. 2-3″, 50 cal.*	2-21″ submerged	Mar. 11, 1916	63	1535
Pennsylvania class, Nos. 38 and 39: Pennsylvania, Arizona	600 0	97 0½	28 10	31,400	21.05	29,366	Turbine, direct drive and cruising reduction gear	12-14″, 45 cal.	14-5″, 51 cal. 4-3″, 50 cal.*	2-21″ submerged	June 12, 1916	65	1495

New Mexico class, Nos. 40, 41 and 42: New Mexico, Mississippi, Idaho	600	0	97	4½	30	0	32,000	[4] 21.00	[4] 27,500	[3] Turbine, electric reduction gear	12-14", 50 cal.	14-5", 51 cal. 4-3", 50 cal.*	2-21" submerged	May 20, 1918	65	1495
Tennessee class, Nos. 43 and 44: Tennessee, California	600	0	97	3½	30	3	32,300	[4] 21.00	[4] 28,500	Turbine, electric reduction gear	12-14", 50 cal.	14-5", 51 cal. 4-3", 50 cal.*	2-21" submerged	Launched April 30, 1919	65	1565
Colorado class, Nos. 45, 46, 47 and 48: Colorado, Maryland, Washington, West Virginia	600	0	97	3½	30	6	32,600	[4] 21.00	[4] 28,900	Turbine, electric reduction gear	8-16", 45 cal.	14-5", 51 cal. 4-3", 50 cal.*	2-21" submerged	Keel laid May 29, 1919	61	1565
South Dakota class, Nos. 49, 50, 51, 52, 53 and 54: South Dakota, Indiana, Montana, North Carolina, Iowa, Massachusetts	660	0	104	9	33	0	43,200	[4] 23.00	[4] 60,000	Turbine, electric reduction gear	12-16", 50 cal.	16-6", 53 cal. 4-3" 50 cal.*	2-21" submerged	Contract dated July 2, 1918		

Data given for type ship. Battleships Nos. 23 and 24 transferred to Greek Navy. *Anti-aircraft. [1] No. 29, Turbine reduction gear. [2] No. 37, Vert. 3-exp. [3] Nos. 41 and 42, Turbine direct drive and cruising reduction gear. [4] Nos. 40 to 54, speed and H.P. estimated. Nos. 1 to 35, coal burning. Nos. 36 to 54, oil burning.

Particulars of United States Battle Cruisers

Lexington class, Nos. 1, 2, 3, 4, 5 and 6: Constellation, Constitution, Lexington, Ranger, Saratoga, United States	850	0	105	5½	31	0	43,500	[1] 33.50	[1] 180,000	Turbine, electric reduction gear	8-16", 50 cal.	16-6", 53 cal. 4-3", 50 cal.*	4-21" submerged 4-21" above water	Contract dated April 26, 1918	57	1264

*Anti-aircraft. [1] Speed and H.P. estimated.

Particulars of United States Armored Cruisers

[1] Rochester, No. 2	380	6	64	10	23	3	8,150	21.00	16,947	Vert., 3-exp.	4- 8", 45 cal.	10-5", 50 cal. 2-3", 50 cal.*		Aug. 1, 1893	45	582
Brooklyn, No. 3	400	6	64	8	24	0	9,215	21.91	18,248	Vert., 3-exp.	8- 8", 35 cal.	8-5", 40 cal. 2-3", 50 cal.*		Dec. 1, 1896	49	633
[2] Pittsburgh class, Nos. 4, 5, 6, 7, 8 and 9: Pittsburgh, Huntington, San Diego, Pueblo, Frederick, South Dakota	502	0	69	6½	24	1	13,680	22.44	28,006	Vert., 3-exp.	4- 8", 45 cal.	4-6", 50 cal. 10-3", 50 cal. 2-3", 50 cal.*	2-18" submerged	Mar. 9, 1905	50	1075
[3] Memphis class, Nos. 10, 11, 12 and 13: Memphis, Seattle, North Carolina, Montana	502	0	72	10½	25	0	14,500	22.16	26,534	Vert., 3-exp.	4-10", 40 cal.	4-6", 50 cal. 12-3", 50 cal. 2-3", 50 cal.*	4-21" submerged	July 17, 1906	49	904

Data given for type ship. Nos. 1, 6 and 10 no longer on register. *Anti-aircraft. [1] Originally New York. [2] Originally Pennsylvania. [3] Originally Tennessee.

Particulars of United States Scout Cruisers

Chester class, Nos. 1, 2 and 3: Chester, Birmingham, Salem	420	0	47	1	16	9	3,750	26.52	25,400	[1], [2] Turbine direct drive	4-5", 51 cal.	2-3", 50 cal. 1-3", 50 cal.*	2-21" above water	April 25, 1908	17	387
Nos. 4 to 13, inclusive	550	0	55	0	13	6	7,100	[3] 35.00	[3] 90,000	Turbine reduction gear	8-6", 53 cal.	2-3", 50 cal.* 2-3, pdr.	2-21" twin above water	Launched Dec. 12, 1918	34	330

Data given for type ship. Nos. 1 to 3, coal burning. Nos. 4 to 13, oil burning. *Anti-aircraft. [1] No. 2, Vert. 3-exp. [2] No. 3, turbine, reduction gear. [3] Speed and H.P., estimated.

TABLE I — *Continued*
PARTICULARS OF UNITED STATES DESTROYERS

Destroyers	No. of ships	Length between perpendiculars	Breadth on load water line	Mean draft	Displacement normal	Speed on trial	Horse power main engines	Machinery type	Battery			Date of first commission	Complement	
									Main	Secondary and anti-aircraft	Torpedo tubes		Officers	Men
		Ft. In.	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*								
Smith class, Nos. 17 to 21	5	289 0	26 0	8 0	700	28.35	9,946	Turbine, direct drive	4–3″ 50 cal.		3–18″ twin	Nov. 26, 1909	8	99
Paulding class, Nos. 22 to 31	10	289 0	26 1½	8 4	742	32.8	17,393	Turbine, direct drive	4–3″ 50 cal.		3–18″ twin	Sept. 29, 1910	6	104
Monaghan class, Nos. 32 to 36	5	289 0	26 1½	8 4	742	30.45	12,410	Turbine, direct drive	4–3″ 50 cal.		3–18″ twin	June 21, 1911	6	104
Fanning class, Nos. 37 to 42	6	289 0	26 1½	8 4	742	29.99	12,600	Turbine, direct drive	4–3″ 50 cal.		3–18″ twin	June 21, 1912	6	104
Cassin class, Nos. 43, 44 and 54	3	300 0	30 4	9 3	1,020	30.14	15,307	Turbine and compound engines	4–4″ 50 cal.		4–18″ twin	Aug. 9, 1913	8	120
Downes class, Nos. 45 to 50	6	300 0	30 4	9 7	1,072	29.07	16,475	Turbine and compound engines	4–4″ 50 cal.		4–18″ twin	Feb. 11, 1915	8	120
O'Brien class, Nos. 51 to 56, except 54	5	300 0	30 4	9 5½	1,050	29.16	16,275	Turbine and compound engines	4–4″ 50 cal.		4–21″ twin	May 23, 1915	6	120
Tucker class, Nos. 57 to 62 [1]	6	310 0	*29 11	9 4½	1,090	29.56	16,399	Turbine, direct drive and cruising reduction gear	4–4″ 50 cal.		4–21″ twin	Apr. 11, 1916	6	120
Sampson class, Nos. 63 to 68	6	310 0	*29 11	9 6	1,111	29.52	17,696	Turbine, direct drive and cruising reduction gear	4–4″ 50 cal.	2–1 pdr. auto. A.A.	4–21″ triple	June 27, 1916	8	122
Caldwell class, Nos. 69 to 74	6	310 0	30 8	8 0½	1,125	31.7	20,000	Turbine reduction geaf	4–4″ 50 cal.	2–1 pdr. auto. A.A.	4–21″ triple	Dec. 1, 1917	8	120
Wickes class, Nos. 75 to 185	111	310 0	30 11½	9 1½	1,185	35.34	24,610	Turbine reduction gear	4–4″ 50 cal.	2–3″ 23 cal. A.A.	4–21″ triple	July 31, 1918	6	125
Clemson class, Nos. 186–347	[2] 156	310 0	30 11½	9 4	1,215	35.00	27,000	Turbine reduction gear	4–4″ 50 cal.	2–3″ 23 cal. A.A.	4–21″ triple	Dec. 29, 1919	8	125
Total	[3] 325													

Data given for type ship. * Extreme breadth. Nos. 17 to 21, coal burning. Nos. 22 to 347, oil burners. [1] No. 61 sunk. [2] Nos. 209–205 cancelled.
[3] February 10, 1920, 105 ships not completed.

TABLE I — *Concluded*

CHARACTERISTICS OF UNITED STATES SUBMARINES

NAME	Displacement		Length		Breadth, extreme		Draft mean		Speed		Number torpedo tubes	Number torpedoes	Number guns	Approximate date of completion
	Surface	Submerged							Surface	Submerged				
			Ft.	*Ins.*	*Ft.*	*Ins.*	*Ft.*	*Ins.*						
A-1 to A-7	106.55	122.55	63	9¾	11	10½	10	7	8.50	7.20	1	3	None	1903
B-1 to B-3	145.00	170.00	82	5	12	5½	10	7	9.20	8.20	2	4	None	1907
C-1 to C-5	240.00	273.00	105	3½	13	10½	10	10½	11.00	9.10	2	4	None	1908-09
D-1 to D-3	288.00	337.00	134	10	13	10½	11	8	13.20	9.60	4	4	None	1909-10
E-1 to E-2	287.20	342.10	135	2½	14	6	11	8	13.50	11.60	4	4	None	1912
F-1 to F-4	330.20	400.10	142	7	15	4½	12	2	13.50	11.40	4	4	None	1912-13
G-1	400.00	516.00	161	0	13	0½	12	6	14.00	10.10	6	6	None	1912
G-2	375.00	481.00	161	0	13	0½	13	7	14.50	10.50	4	8	None	1913
G-3	393.00	468.00	161	0	13	0½	12	10	14.00	9.50	6	10	None	1913
G-4	370.60	452.20	157	5½	17	6½	11	2⅛	14.00	9.50	4	8	None	1914
H-1 to H-3	358.00	434.00	150	3½	15	9½	12	5	14.10	10.60	4	8	None	1913-14
K-1 to K-8	392.00	521.00	153	6½	16	8½	13	1	14.10	10.60	4	8	None	1914
L-1 to 4 and L-9 to L-11	450.00	548.00	168	5½	17	5	13	7	14.00	10.50	4	8	1-3", 23 cal.	1916
L-5 to L-8	451.00	527.00	165	0	14	9	13	3	14.00	10.50	4	8	1-3", 23 cal.	1918
M-1	488.00	676.00	196	3	19	0½	11	0	14.00	10.50	4	8	1-3", 23 cal.	1918
AA-1	1,106.00	1,487.00	269	9	22	10	14	1	20.00	11.50	6	14	1-4", 50 cal.	1920
N-1 to N-3	347.90	414.20	147	3	15	9½	12	5½	13.00	11.00	4	8	None	1917
N-4 to N-7	331.00	385.00	155	0	14	7	12	4	13.00	11.00	4	8	None	1918
AA-2 and AA-3	1,106.00	1,487.00	269	9	22	10	14	1	20.00	11.50	4	12	2-4", 50 cal.	Building
O-1 to O-10	520.60	629.30	172	4	18	0½	14	5	14.00	10.50	4	8	1-3", 23 cal.	1918
O-11 to O-16	485.00	566.00	175	0	16	3½	13	10½	14.00	11.00	4	8	1-3", 23 cal.	1918
R-1 to R-20	569.00	680.00	186	1½	18	0½	14	6	13.50	10.50	4	8	1-3", 50 cal.	1918-19
R-21 to R-27	495.00	598.00	175	0	16	7½	13	11	14.00	11.00	4	8	1-3", 50 cal.	1919
S-1 and S-18 to S-41	854.00	1,062.00	219	3	20	8	15	10½	14.50	11.00	4	12	1-4", 50 cal.	Building
S-2	800.00	977.00	207	0	19	7½	16	2	16.00	11.00	4	12	1-4", 50 cal.	Building
S-3 to S-13	876.00	1,092.00	231	0	21	10½	13	1	15.00	12.25	4	12	1-4", 50 cal.	Building
S-14 to S-17	876.00	1,092.00	231	0	21	10½	13	1	13.50	12.25	4	12	1-4", 50 cal.	Building
H-4 to H-9	357.70	434.00	150	3½	15	9½	12	4½	12.75	10.25	4	8	None	1918
S-42 to S-47	906.00	1,126.00	225	3	20	8	16	0	14.50	11.00	4	12	1-4", 50 cal.	Building
S-48 to S-51	993.00	1,230.00	240	0	21	10½	13	6	14.80	11.00	4	14	1-4", 50 cal.	Building

WASHINGTON

TABLE II
PARTICULARS OF BRITISH SHIPS COMPLETED OR DESIGNED SINCE 1910

	No. of ships	Length[3]	Breadth extreme	Mean draft	Displacement	Speed on trial	Horse-power main engines	Machinery type	Battery			Completed	Complement
									Main	Secondary and anti-aircraft	Torpedo tubes		
BATTLESHIPS		*Ft. In.*	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*							
St. Vincent class	[2] 3	500 0	84 0	27 0	19,250	21.9	24,500	Turbines	10–12″	18–4″, 4–3 pdr.	3	1910	780
Neptune class [1]	3	510 0	85 0	27 0	19,900	21.78	27,721	Turbines	10–12″	16–4″, 4–3 pdr.	3	1911	780
Orion class	4	545 0	88 6	27 6	22,500	21.02	29,108	Turbines	10–13.5″	16–4″, 4–3 pdr.	3	1911	800
King George V	[2] 4	555 0	89 0	27 6	23,000	22.0	28,005	Turbines	10–13.5″	16–4″, 4–3 pdr.	3	1912	900
Erin	1	525 0	91 6	28 6	22,940	[4] 21.5	26,500	Turbines	10–13.5″	16–6″, 6–6 pdr. 2–3″, 4 A.A.	4 submerged	1914	900
Agincourt	1	632 0	89 0	27 0	27,500	[4] 22.0	34,000	Turbines	14–12″	20–6″, 10–12 pdr.	3 submerged	1914	1,100
Canada	1	625 0	92 0	28 6	28,000	[4] 23.0	37,000	Turbines	10–14″	14–6″, 6–3″	4–21″ submerged	1915	1,000
Iron Duke class	4	580 0	90 0	28 0	25,000	[4] 21.0	29,000	Turbines	10–13.5″	12–6″, 4–3 pdr. A.A.	4–21″ submerged	1914	828
Queen Elizabeth class	5	600 0	90 6	28 9	27,500	[4] 25.0	75,000	Turbines geared cruising	8–15″	12–6″, 4–3 pdr., 2 A.A.	4–21″ submerged	1915	925
Royal Sovereign class	5	580 0	88 6	28 6	25,750	[4] 23.0	40,000	Turbines	8–15″	14–6″, 4–3 pdr., 2 A.A.	4–21″ submerged	1916	915
Total	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
BATTLE CRUISERS													
New Zealand class	[2] 2	555 0	80 0	26 6	18,800	[4] 25.0	46,894	Turbines	8–12″	16–4″, 4–3 pdr.	2	1912	780
Lion class	[2] 3	660 0	88 6	28 0	26,350	28.5	75,685	Turbines	8–13.5″	16–4″, 4–3 pdr.	2	1912	980
Tiger	1	660 0	90 6	28 6	28,500	[4] 30.0	108,000	Turbines	8–13.5″	12–6″, 4–3 pdr., 2 A.A.	4	1914	1,110
Renown class	2	750 0	90 0	25 6	26,500	[4] 32.0	112,000	Turbines	6–15″	17–4″, 2–3″ A.A.	2	1916	950
Hood [5]	1	810 0	104 0	28 6	41,200	31.0	144,000	Turbines geared	8–15″	12–5.5″, 4–3 pdr. 4–4″ A.A.	.....	.....	.....
Total	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
LIGHT CRUISERS													
Blonde class [6]	4	385 0	41 6	13 6	3,350	25.43	18,770	Turbines	10–4″	4–3 pdr.	2	1910–11	292
Active class	[2] 3	385 0	41 6	13.9	3,440	26.00	18,000	Turbines	10–4″	4–3 pdr.	2	1911	320
Bristol class	5	430 0	47 0	15 3	4,800	26.84	24,529	Turbines	2–6″	10–4″	2	1910	376
Dartmouth class	[2] 4	430 0	48 6	15 6	5,250	25.9	23,467	Turbines	8–6″	4–3 pdr.	2	1911	390
Chatham class	3	430 0	49 9	15 9	5,400	[4] 25.5	25,901	Turbines	8–6″	4–3 pdr.	2	1912	400
Birmingham class	[2] 3	430 0	49 0	15.1	5,440	[4] 25.5	26,500	Turbines	9–6″	4–3 pdr.	2	1914	400
Aurora class	[2] 8	410 0	39 0	14 0	3,500	[4] 30.0	40,000	Turbines	2–6″	6–4″, 1–4″. A.A	4	1914	270
Calliope class	14	420 0	41 0	13.6	3,750	[4] 29.0	40,000	Turbines geared	2–6″	8–4″	4	1915	287
Birkenhead class	2	430 0	48 0	15 0	5,250	[4] 25.0	25,000	Turbines	10–5.5″	.....	.....	1915	400
Caledon class	4	425 0	42.9	14.6	4,120	[4] 29.0	40,000	Turbines geared	5–6″	2–3″ A.A.	8	1917	287
Cardiff class	10	425 0	43.6	14.6	4,190	[4] 29.0	40,000	Turbines geared	5–6″	2–3″ A.A.	8	1918	287
Danae class [6]	11	445 0	46 0	14.3	4,750	[4] 29.0	40,000	Turbines geared	6–6″	2–3″ A.A.	12	1918	340

Raleigh class [10]	5	565 0	65 0	17.3	9,750	[4] 30.0	60,000	Turbines geared cruising	7–7.5″	8–3″, 4–3″ A.A.	6	.....	480
Courageous class [7]	2	735 0	81 0	22.3	18,600	[4] 32.0	90,000	Turbines geared	4–15″	18–4″, 3–3″ A.A.	2	1916	785
Furious [7] [8]	1	735 0	88 0	21.6	19,100	[4] 31.5	90,000	.....	2–18″	8–5.5″, 4–3 pdr. 2–3″ A.A.	2	1917	725
Total	79	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Flotilla Leaders													
Faulkner class	[2] 4	320 0	32.6	11 0	1700–1740	31.5	30,000	Turbines	6–4″	1–1½ pdr.	4	1914	160
Kempenfelt class	[2] 13	315 0	31.9	10 0	1610–1680	34.0	36,000	Turbines	4–4″	2–2 pdr.	4–21″	1915–16	.....
Valkyrie class	5	300 0	29.6	9 0	1320–1340	34.0	27,000	Turbines geared	4–4″	1–3″ A.A.	4–21″	1917	.....
Scott class [11]	[2] 15	320 0	31.9	10.6	1800	36.5	42,500	Turbines geared	5–4.7″	1–3″ A.A.	6–21″	1917–18	.....
Total	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Data given for type ship. [1] Includes Colossus and Hercules. [2] One of class sunk. [3] Between perpendiculars. [4] Estimated. [5] Data uncertain. [6] Includes Bellona and Boadicea. [7] Large light cruiser. [8] Seaplane carrier. [9] Five building. [10] One completed as seaplane carrier,—four building. [11] Includes Shakespeare class.

Particulars of British Submarines Completed or Designed Since 1910

Submarines	Lost or sunk	Removed from register	On present register	Total	Length over all	Breadth	Mean draft	Displacement		Speed		Horsepower		Machinery		Battery			Completed	Complement
								Surface	Submerged	Surface	Submerged	Surface	Submerged	Surface	Submerged	Main	Secondary and anti-aircraft	Torpedo tubes		
					Ft. In.	*Ft. In.*	*Ft. In.*	*Tons*	*Tons*	*Knots*	*Knots*									
Class E	27	7	22	56	181 0	22 6	12 6	662	807	15	10	1,600	840	Diesel.	Elec...	1–3″	.....	5–18″	1912–17	28
Class P	..	....	3	3	151 0	16 0	10 9	353	525	14.5	8.8	900	400	Diesel.	Elec...	.....	.....	3–18″	1915–17	20
Class G	4	4	6	14	187 0	22.6	13 6	700	975	14	10	1,600	840	Diesel.	Elec...	1–3″	1–2 pdr. A.A.	4–18″ and 1–21″	1916	30
Class H	3	[1] 17	32	52	171 0	15.9	15 9	440	500	13	10.5	480	320	Diesel.	Elec....	.....	1–3″ A.A.	4–21″	1917	22
Class J	1	[2] 6	....	7	275 0	23 0	14 0	1,260	1,820	19	9.5	3,600	1,400	Diesel.	Elec...	1–4″	.....	6–18″	1915–17	44
Class K	3	1	13	17	338 0	26 6	16 0	1,880	2,650	24	9	10,000	1,400	Gear. Turb. Diesel. Elec.	Elec...	1–4″	1–3″ A.A.	8–18″	1916	55
Class L [3]	1	35	37	73	231 0	23 6	13 9	890	1,070	17.5	10.5	2.400	1.600	Diesel.	Elec...	1–3″ or 4″	.....	6–18″	1917	36
Class M [4]	..	....	4	4	200 0	20 0	10 0	1,600	1,950	15	9	.....	.....	Diesel.	Elec...	1–12″	1–3″ A.A.	.....	1918	60
Class R [5]	..	....	12	12	160 0	15 0	12 0	420	500	10	15	250	1,000	Semi-Diesel.	Elec...	1–3″ or 4″	.....	4 or 6–18″	1918	20
Class V	..	4	....	4	147 6	16 3	.....	.....	460	13	8.5	900	.....	Diesel.	Elec...	.....	.....	2–18″	1912–14	..
Class W [6]	1	3	....	4	149 9	17 0	9 6	340	500	13	8.5	760	480	Diesel.	Elec...	.....	1–3″ A.A.	2–18″	1914–15	19
	40	77	129	246	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...

Particulars uncertain. [1] Six H-boats presented to Chile and two to Canada. [2] J class presented to Australia. [3] Many variations in L type. [4] Submarine monitors. [5] Submarine destroyers. [6] W class presented to Italy during war.

TABLE II — *Concluded*

PARTICULARS OF BRITISH DESTROYERS COMPLETED OR DESIGNED SINCE 1910

DESTROYERS	Sunk or lost	No. of ships	Length	Breadth	Mean draft	Displacement	Speed on trial	Horse-power main engines	Machinery type	Battery			Launched or completed	Complement
										Main	Secondary and anti-aircraft	Torpedo tubes		
			Ft. In.	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*							
Miscellaneous ships	1	12	252 0 to 275 0	26.4 0 to 28 0	8.6 0 to 9.3 0	780–984	27.03 to 29.4	12,500 to 15,500	.....	1 or 2–4″	2 or 3–12 pdr.	2	1910–11	72–96
Acorn class	.....	35	240 0	25.6 0	7.1 0	780	27.22	13,500	Turbines	2–4″	2–12 pdr.	2	1910–11	72
Acasta class	.....	13	260 0	27 0	9.4 0	935	29.0	24,500	Turbines	3–4″	.....	2	1912–13	100
Laforey class	1	21	260 0	27.8 0	9 6	965	29.0	24,500	Turbines	3–4″	.....	....	1913–14	100
Milne class	13	84	265 0	26.8 0	8.8 0	1,010	34.0	25,000	Turbines	3–4″	.....	4	1914–17	80
Miranda class	3	25	260.3 0	25.7 0	8.8 0	883	35.0	23,000	Turbines	3–4″	1–2 pdr.	4	1914	79
Mentor class	.....	21	265 0	27.3 0	8.8 0	980	35.0	26,500	Turbines	3–4″	1–2 pdr.	4	1915	76
Meteor class	5	45	265 0	27 0	8.8 0	1,040–55	35.0	27,000	Turbines	3–4″	1–2 pdr.	4	1914–17	82
Tirade class	.....	63	265 0	26.8 0	9 0	1,075–90	36.0	27,000	Turbines geared	3–4″	1–2 pdr.	4	1917	82
Talisman class	1	4	300 0	28.6 0	9 0	1,098	32.0	25,000	Turbines	5–4″	1–2 pdr.	4	1916	102
Vancouver class	1	42	300 0	29.6 0	8.1 0	1,275–1,320	34.0	27,000	Turbines geared	4–4″	1–3″ A.A.	4	1917	110
Viceroy class	.....	4	300 0	30.7 0	8.1 0	1,315–1,325	35.0	30,000	Turbines geared	4–4″	1–3″ A.A.	4	1918	110
Vansittart class	.....	36	300 0	29.6 0	9 0	1,300–1,350	34.0	27,000	Turbines geared	4–4.7″	1–3″ A.A.	6	Building	127
Total	25	[1] 405	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....

Data given for type ship. [1] About 100 ships of various classes not completed April, 1919.

TABLE III

PARTICULARS OF FRENCH SHIPS COMPLETED OR DESIGNED SINCE 1910

	No. of ships	Length	Breadth	Mean draft	Displacement	Speed on trial	Horse-power main engines	Machinery type	Battery			Completed	Complement
									Main	Secondary and anti-aircraft	Torpedo tubes		
BATTLESHIPS		*Ft. In.*	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*							
Condorcet class	[1]6	481 0	84 0	27 0	18,890	19.8	22,500	Turbines	4–12″ 12–9.4″	16–12 pdr. 8–3 pdr.	2 submerged	1911	690
Jean Bart class	4	546 0	88 6	29 0	23,467	[2]22.0	[2]28,000	Turbines	12–12″	22–5.5″ 4–3 pdr.	4 submerged	1913	998
Bretagne class	3	546 0	88 6	29 0	23,177	[2]20.0	[2]29,000	Turbines	10–13.4″	22–5.5″	4 submerged	1915	1,167
Normandie class	[1]5	579 0	88 6	28 3	25,231	[2]21.5	[2]34,800	Turbines	12–13.4″	24–5.5″ 4–3 pdr.	6 submerged	Launched 1914	1,204
Total	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
ARMORED CRUISERS													
Edgard Quinet	2	521 0	70 3	27 6	14,100	23.9	39,803	Vert. 3-exp.	14–7.6″	20–2.4″	2 submerged	1911	738
Total	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
DESTROYERS													
Chasseur class	3	222 0	21.8	10 0	492	30.39	9,000	Turbines	4–9 pdr.	.....	2	1910	62
Casque	1	246.4	25 0	10 0	820	34.9	14,400	Turbines	1–25 pdr.	4–9 pdr.	4	1910	62
Bouclier	1	237 0	24.9	9.4	790	35.33	13,600	Turbines	2–25 pdr.	4–9 pdr.	4	1911	62
Cimeterre	1	253.4	28.7	10 0	894	31.15	13,500	Turbines	2–25 pdr.	4–9 pdr.	4	1911	62
Henry class	2	221 0	21.6	10.3	475	28.5	7,500	Turbines	6–9 pdr.	.....	4	1911–12	62
Bory class	5	253.6	25.4	10 0	780	31.0	14,100	Turbines	2–3.9″	4–9 pdr.	4	1912	81
Bisson class	5	272.4	26 0	10 0	800	31.0	15,000	Turbines	2–3.9″	4–9 pdr.	2 twin	1912–13	81
Roux class	3	271 0	26.9	10 0	880	31.0	20,000	Turbines	2–3.9″	4–9 pdr.	3 twin	1914–15	81
Total	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Data given for type ship. [1] Not completed. [2] Estimated. [3] One of class sunk.

TABLE IV

PARTICULARS OF ITALIAN SHIPS COMPLETED OR DESIGNED SINCE 1910

	No. of ships	Length between perpendiculars	Breadth	Mean draft	Displacement	Speed on trial	Horse-power main engines	Machinery type	Battery			Completed	Complement
									Main	Secondary and anti-aircraft	Torpedo tubes		
BATTLESHIPS		*Ft. In.*	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*							
Dante Alighieri	1	519 8	87 5	28 5	19,190	22.8	31,980	Turbines	12–12″	20–4.7″ 12–14 pdr.	3 submerged	1912	992
Conte di Cavour class	3	554 4	91 10	29 0	22,023	[2] 22.0	[2] 32,500	Turbines	13–12″	18–4.7″ 12–14 pdr.	3 submerged	1914–15	1,060
Andrea Doria class	2	554 4	91 10	29 0	22,562	[2] 21.5	[2] 32,000	Turbines	13–12″	16– 6″ 13–14 pdr. 6–14 pdr. A.A.	3 submerged	1915–16	1,074
Francesco Morosini class [1]	2	661 5	98 0	30 5	28,000	[2] 25.0	[2] 48,000	Turbines	8–15″	16– 6″ 20– 4″	.....	Launched 1915	1,300
Caracciolo class [1]	2	661 5	98 0	30 5	30,900	[2] 27.0	[2] 105,000	Turbines	8–15″	14– 6″ 20– 4″	.....	.....	1,300
Total	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
ARMORED CRUISERS													
San Giorgio class	2	429 9	69 0	26 2	10,000	[2] 22.5	[2] 18,000	[3] Vert. 3-exp.	4–10″ 8–7.5″	10–14 pdr. 6–14 pdr. A.A.	3 submerged	1910	689
Total	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
SCOUT CRUISERS AND FLOTILLA LEADERS													
Quarto	1	413 4	42 2	13 0	3,280	28.7	29,000	Turbines	6–4.7″	6– 3″ 2 A.A.	2	1912	253
Nino Bixio class	2	429 9	42 9	13 3	3,500	27.7	22,500	Turbines	6–4.7″	6– 3″ 2 A.A.	2	1914	300
Alessandro Poerio class	2	272 7	26 3	9 3	1,030	30.0	20,000	Turbines	6–4″	4–12 pdr. A.A.	2 twin	1915	100
Carlo Mirabello class	3	331 5	32 0	10.6	1,540	33.75	35,000	Turbines	8–4″	2–12 pdr. A.A.	2 twin	1916	140
Aquila class	4	308 6	31 0	10.7	1,600	34.0	44,000	Turbines	3–6″	4–12 pdr. A.A.	2 twin	1916	160
Leone class	4	359 6	34 0	11.5	2,200	34.0	42,000	Turbines	8–4.7″	4–12 pdr. A.A.	2 triple	Building	.....
Total	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
DESTROYERS													
Ascaro class	[4] 6	211 6	20 0	6 8	390–420	29.0	6,000	.....	2 or 4–14 pdr.	4– 6 pdr.	3	1910–12	.....
Ardito class	[5] 10	237 0	24 0	8 5	686	33.4	15,150	Turbines	5–4″	2– 2 pdr. A.A.	2	1912–13	100
Francesco Nullo class	[4] 20	238 0	24 0	8.9	770	33.0	18,000	Turbines	5–4″	2– 2 pdr. A.A.	2 twin	1913–17	100
Audace	1	275 0	27 6	9 6	955	[2] 30.0	[2] 21,500	Turbines	7–4″	2– 2 pdr. A.A.	2 twin	1918	111
Palestro class	8	256 7	24 10	8 8	880–950	[2] 32.0	[2] 24,000	Turbines	4–4″	2–14 pdr. A.A. 2– 2 pdr. A.A.	2 twin	1918–19	.....
Total	45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Data given for type ship. [1] Three ships of these two classes have been dismantled; the remaining ship, the Caracciolo is being finished as a battle cruiser. [2] Estimated. [3] Marco has turbines. [4] One lost. [5] Three lost.

TABLE V

Particulars of Japanese Ships Completed or Designed Since 1910

	No. of ships	Length between perpendiculars	Breadth	Mean draft	Displacement	Speed on trial	Horsepower main engines	Machinery type	Battery: Main	Battery: Secondary and anti-aircraft	Battery: Torpedo tubes	Completed	Complement
Battleships		*Ft. In.*	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*							
Satsuma	1	450 0	83 6	27 6	19,350	18.95	18,507	Vert. 3 exp.	4–12″ 12–10″	12–4.7″	5 submerged	1910	940
Aki	1	460 0	83 6	27 6	19,800	20.0	24,000	Turbines	4–12″ 12–10″	8–6″ 8–12 pdr.	5 submerged	1911	940
Settsu	2	500 0	84 0	27 6	20,800	20.5	25,000	Turbines	12–12″	10–6″ 8–4.7″	5 submerged	1912	1,000
Fuso class [1]	[3] 4	630 0	94 0	28 6	30,600	22.5	45,000	Turbines	12–14″	16–6″ 12–12 pdr. 4 A.A.	6 submerged	1915–18	1,243
Mutsu class [2]	[4] 2	.....	.....	.....	32,000	.....	.....	Turbines geared	8–16″	.....	.....	Launched 1919	.....
Total	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Battle Cruisers		Overall											
Kongo class	4	704 0	92 0	27 6	27,500	27.5	78,000	Turbines	8–14″	16–6″ 8–12 pdr.	8 submerged	1913–15	1,090
Total	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Armored Cruisers		Between perpendiculars											
Ibuki class [5]	2	450 6	75 6	26 8	14,600	21	27,000	Turbines	4–12″ 8–8″	14–4.7″	3 submerged	1909–11	845
Total	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Light Cruisers													
Hirado class	3	440 0	46 6	16 6	4,950	26	22,500	Turbines	8–6″	4–3″	3 submerged	1912	413
Total	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Destroyers													
Umikaze class	3	310 0	27 9	9 0	1150–1227	31.5 34	9,500 to 27,000	Turbines	2–4.7″	5–3″	3 or 4	1909–15	138
Kaba class [7]	12	260 0	24 0	7 11	665	30	19,500	Vert. 3 exp.	1–4.7″	4–12 pdr.	4	1912–14	92
Momo class [7]	24	260 0	25 4	7 9	835	31.5	16,000	Turbines	3–4.7″	.....	6	1918	109
Tanikase class [7]	12	320 0	29 0	9 6	1,300	34	28,000	Turbines	4–4.7″	.....	6	1918	145
Kikutsuki and Minatsuki of old Hatsushima class [7]	2	220.3	21 6	6 0	374	29	6,000	.....	6–12 pdr.	.....	2	Building	61
Total	53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Data given for type ship. Speed and horsepower estimated. [1] Particulars uncertain. [2] Building. [3] Hyuga and Ise slightly larger and have 600 tons more displacement; have 20–5.5″ guns instead of 16–6″. [4] Two additional proposed. [5] One lost. [6] Ikoma and Tsukaba, slightly smaller completed before 1910. [7] Dimensions vary somewhat in different groups of class.

TABLE VI

Particulars of Russian Ships Completed or Designed Since 1910

	No. of ships	Length (over all)	Breadth	Mean draft	Displacement	Speed on trial [2]	Horse-power main engines [2]	Machinery type	Battery			Completed	Complement
									Main	Secondary and anti-aircraft	Torpedo tubes		
Battleships		*Ft. In.*	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*							
Evstafi class	2	387 0	74 0	27 0	12,733	16.0	10,600	.....	4–12″ 4–8″	12–6″ 14–3″	2 submerged	1910–11	970
Andrei Pervozvannyi class	2	460 0	80 0	27 0	17,400	18.0	17,600	Vert. 3 exp.	4–12″ 14– 8″	12–4.7″	2 submerged	1910–11	933
Gangut class	4	594 0	87 0	27 3	23,000	23.0	42,000	Turbines	12–12″	16–4.7″ 4–9 pdr.	4 submerged	1914–15	1,125
Volya (ex Imperator Alexander III)	1	551 3	89 6	27 4	22,500	21.0	26,500	Turbines	12–12″	18–5.1″ 4–2.5″	4 submerged	1914–15	1,252
Demokratiya [1] (ex Nicolai I)	1	597 0	95 0	29 6	27,300	21.0	29,700	Turbines	12–12″	20–5.1″ 4–4″ A.A.	4 submerged	Launched 1916	.....
Total	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Battle Cruisers													
Borodino class [1]	4	728 6	98 3	28 9	32,500	26.5	68,000	Turbines	12–14″	24–5.1″ 4–2.5″	6 submerged	2 launched 1915	.....
Total	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Armored Cruisers													
Bayan	1	449 0	57 5	21 3	7,775	21.0	16,500	Vert. 3 exp.	3–8″ 12–6″	18–11 pdr. 4– 6 pdr.	2 submerged	1910	573
Total	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Light Cruisers													
Admiral Grieg class [1, 2]	8	503 0	50 4	18 4	6,800	29.5	50,000	Turbines	16–5.1″	4– 4″ 4– 3″	2 submerged	Launched 1915–16	.....
Total	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Destroyers													
Novik class	1	336 0	31 4	9 6	1,200	36.3	42,800	Turbines	4–4″	1–2 pdr. A.A.	4 twin	1911	112
Gromki class	5	321 6	30 6	9 9	1,110	34.0	25,500	Turbines	3–4″	.....	5 twin	1911	140
Bespokoini class [3, 4]	2	307 8	29 6	9 0	1,088–1,303	34.0	25,500	Turbines	3–4″	.....	5 twin	1912–14	140
Improved Novik class [1]	30	314 9	30 6	9 9	1,200–1,350	34–35	30,000	Turbines	3–4″	1–2 pdr. A.A.	3 triple	1914–15	110
Total	38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Data given for type ship. [1] Building. [2] Estimated. [3] Slight differences in dimensions of vessels of above class. [4] Black Sea fleet. [5] Slight differences in particulars.

TABLE VII

Particulars of Austrian Ships Completed or Designed Since 1910

	No. of ships	Length	Breadth	Mean draft	Displacement	Speed on trial	Horse-power main engines	Machinery type	Battery			Completed	Complement
									Main	Secondary and anti-aircraft	Torpedo tubes		
Battleships		*Ft. In.*	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*							
Erzherzog Franz Ferdinand class	3	450 9	80 6	26 6	14,226	20.6	20,600	Vert. 3 exp.	4–12″ 8–9.4″	20–3.9″ 6–12 pdr.	3 submerged	1910	816
Prinz Eugen class	[1] 4	495 0	89 6	27 0	20,000	[2] 20.5	[2] 25,000	Turbines	12–12″	12–5.9″ 18–12 pdr.	4 submerged	1915	1,000
Total	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Torpedo Cruisers													
Admiral Spaun class	4	416 9	42 0	15 6	3,500	[2] 26.0	[2] 21,000	Turbines	7–3.9″	.....	2	1910	320
Total	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Destroyers													
Tatra class	4	265.9	25.6	8 0	787	33	17,000	Turbines	2–4″	4–12 pdr.	2	1912	102
Varasdiner class	4	219.8	20.3	8 0	394	30	6,000	.....	1–12 pdr.	7–3 pdr.	2	1914	64
Total	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Data given for type ship. [1] Two of class sunk. [2] Estimated.

TABLE VIII

Particulars of German Ships Completed or Designed Since 1910

	No. of ships	Length	Breadth	Mean draft	Displacement	Speed on trial	Horse-power main engines	Machinery type	Battery: Main	Battery: Secondary and anti-aircraft	Battery: Torpedo tubes	Completed	Complement
Battleships		*Ft. In.*	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*							
Nassau class [7]	4	[4] 452 0	88 3	26 6	18,600	20.7	25,850	Vert. 3 exp.	12–11″	12–5.9″ 2–3.4″	6 submerged	1910	961
Ostfriesland class [6]	4	[2] 546 3	93 6	27 0	22,440	21.23	35,500	Vert. 3 exp.	12–12″	14–5.9″ 2–3.4″	6 submerged	1911	1,107
Kaiser class [6]	5	[2] 564 3	95 3	27 3	24,310	23.46	55,100	Turbines	10–12″	14–5.9″ 2–3.4″	5 submerged	1912	1,125
König class [6]	4	[2] 573 3	96 9	27 3	25,390	[2] 21.0	[2] 31,000	Turbines	10–12″	14–5.9″ 4–3.4″	5 submerged	1914	1,150
Bayern class	[1] 4	[2] 623 3	99 9	28 0	28,000	[2] 22.0	[2] 56,000	Turbines	8–15″	16–5.9″ 4–3.4″ A.A.	5 submerged	1916	1,200
Total	21												
Battle Cruisers													
Von der Tann [8]	1	562 9	87 3	26 6	19,100	27.75	79,800	Turbines	8–11″	10–5.9″ 4–3.4″	4 submerged	1911	910
Moltke class [6]	[2] 2	610 3	96 9	27 0	22,640	28.4	85,782	Turbines	10–11″	12–5.9″ 2–3.4″	4 submerged	1912	1,013
Seydlitz	1	656 3	93 6	27 0	24,610	29.2	89,738	Turbines	10–11″	12–5.9″ 2–3.4″	4 submerged	1913	1,108
Hindenburg class	[9] 3	689 0	95 3	27 3	26,200	[2] 28.0	[2] 85,000	Turbines	8–12″	16–5.9″ 8–3.4″ A.A.	5 submerged	1917	.....
Graf von Spee class	[10] 3	715 0	93 0	27 0	27,000	[2] 28.0	.....	Turbines	6–15″	14–5.9″ 8–3.4″ A.A.	6 submerged	1917	.....
Total	10												
Light Cruisers													
Augsburg class	2	[2] 402 0	46 0	16 6	4,280	27.01	31,340	Turbines	6–5.9″	2–3.4″ A.A.	2 submerged	1910	379
Strassburg class	2	[4] 446 3	43 6	15 9	4,480	28.28	33,742	Turbines	7–5.9″	2–3.4″ A.A.	2 submerged	1912	373
Graudenz class	[12] 3	[4] 456 0	45 0	17 0	4,842	[2] 27.5	[2] 26,000	Turbines	7–5.9″	2–3.4″ A.A.	2 submerged	1914	373
Pillau	1	[4] 441 0	46 0	19 6	4,320	[2] 27.5	[2] 27,400	Turbines	8–5.9″	2–3.4″ A.A.	5	1914	372
Nürnberg class	[13] 10	[4] 450 0	45 0	16 0	4,200	[2] 28.5(?)	[2] 45,000	Turbines	7–5.9″	3–3.4″ A.A.	4	1916	500
Brummer class [6] [11]	2	[4] 430 0	44 0	15 6	4,000	[2] 34.0	[2] 46,000	Turbines	4–5.9″	2–3.4″ A.A.	2 submerged	1916	480
Total	20												

Data given for type ship. [1] Two of class not completed, other two interned Scapa Flow, one sunk. [2] Length on water line. [3] Estimated. [4] Length between perpendiculars. [5] Scuttled by crew at Scapa Flow. [6] Surrendered. [7] Dismantled in Germany. [8] One of class transferred to Turkey, Moltke scuttled at Scapa Flow. [9] One of class not completed, other two scuttled at Scapa Flow. [10] Not completed. [11] Mining Cruiser. [12] Four of class not completed, rest scuttled at Scapa Flow. [13] Frankfurt included, scuttled at Scapa Flow.

TABLE VIII — *Concluded*

PARTICULARS OF GERMAN SHIPS COMPLETED OR DESIGNED SINCE 1910 — *Concluded*

DESTROYERS	Sunk or lost	No. of ships	Length	Breadth	Mean draft	Displacement	Speed on trial	Horse-power main engines	Machinery type	Battery			Completed	Complement
										Main	Secondary and anti-aircraft	Torpedo tubes		
			Ft. In.	*Ft. In.*	*Ft. In.*	*Tons*	*Knots*							
V-1 type	11	13	233 0	25 0	9 0	570	32.5	15,000	Turbines	2–3.4″		4–19.7″	1911–1912	73
V-43 type	36	26	270 0	27 0	10 6	750–800	35	23,000	Turbines	3–4.1″		4 or 6–19.7″	1916–1918	96–100
B97-98–V-100	0	3	328 0	32 0	10 0	1,300	34	.....	Turbines	4–4.1″		6	1916	140–160
Miscellaneous types	19	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total[1]	66	45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Data for destroyers uncertain. Figures approximate only. Destroyers interned at Scapa Flow were scuttled by crew. [1] About 50 others started or projected but unfinished.

PARTICULARS OF GERMAN SUBMARINES

U CLASS	No. of ships	Length	Breadth	Mean draft	Displacement		Speed		Horse power		Machinery type		Battery			Launched	Complement
					Surface	Submerged	Surface	Submerged	Surface	Submerged	Surface	Submerged	Main	Machine guns	Torpedo tubes		
		Feet	*Feet*	*Feet*	*Tons*	*Tons*	*Knots*	*Knots*									
U-1	1	128	9	9	197	236	12	9	400	240	6-cyl. gas	Elec.	.....	.....	1–17.7″	1906	12
U-2	1	130	12	9	220	280	12	9	600	320	6-cyl. gas	Elec.	1–1.5″	.....	1–17.7″	1908	15
U-3—U-4	2	137	12	9	240	300	12	9	600	320	Diesel	Elec.	1–1.5″	.....	1–17.7″	1908	17
U-5—U-8	4	160	17	10	450	550	13	9	900	500	Diesel	Elec.	1–1.5″	1	2–17.7″	1910	23
U-9—U-16	8	180	19	11.7	550	675	14	9	1,200	500	Diesel	Elec.	1–3.5″	1	3–17.7″	1910–1912	30
U-17—U-20	4	200	21	12.5	660	750	15	10	1,300	600	Diesel	Elec.	1–3.5″	1	4–17.7″	1913	30
U-21—U-28	8	220	19	12	650	850	17	9	1,700	800	Diesel	Elec.	1–3.5″	1	4–19.7″	1913–1914	36
U-29—U-40	12	220	20	13.5	700	900	18	12	1,800	900	Diesel	Elec.	1 or 2–3.5″	1	4–19.7″	1913–1914	36
U-41—U-62	22	230	21	14	800	1,050	18	12	2,000	900	Diesel	Elec.	2–3.5″	1	4–19.7″	1914–1915	40
U-63—U-80	18	240	22	15	850	1,120	18	12	2,300	1,000	Diesel	Elec.	1–4.14″ 1–3.5″	1	4–19.7″	1914–1915	45
U-81—U-108	28	250	25	16	950	1,200	18	13	2,500	1,200	Diesel	Elec.	1–5.9″ 1–2.25″	1	6–19.7″	1915–1916	50
U-109—U-117	9	296	30.2	16.75	1,200	1,475	19	13	3,000	1,400	Diesel	Elec.	2–5.9″	2	6–19.7″	1915–1916	60
U-118—U-154	37	336	34.2	17.2	1,375	1,770	20	14	3,400	1,600	Diesel	Elec.	2–5.9″	2	6–19.7″	1916–1917	65
U-155 (Deutschland)	1	295	40	16.4	1,300	1,700	14	8	1,200	1,000	Diesel	Elec.	2–5.9″	2	8–19.7″	1916	55
U-156—U-162	7	380	38.4	17.75	1,965	2,460	22	15	5,000	2,000	Diesel	Elec.	2–5.9″ 2–1.5″	2	8–19.7″	1917–1918	65
Total	162	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Of the above number, 6 were broken up by the Germans; 58 were sunk or destroyed in the war; 13 were lost at sea; 64 were surrendered; 21 were never completed. There were also about 130 small boats of U. B. class used for coast defense and 100 larger boats of U. C. class used as mine layers.

TABLE IX

Giving Particulars of British War Vessels Designed or Built During the Great War *

	Battleships					
	Iron Duke	Queen Elizabeth	Royal Sovereign	Agincourt	Erin	Canada
Length between perpendiculars	580 ft. 0 in.	600 ft. 0 in.	580 ft. 0 in.	632 ft. 0 in.	525 ft. 0 in.	625 ft. 0 in.
Length over all	622 ft. 9 in.	643 ft. 9 in.	624 ft. 3 in.	671 ft. 6 in.	559 ft. 6 in.	661 ft. 0 in.
Breadth, extreme	90 ft. 0 in.	90 ft. 6 in.	88 ft. 6 in.	89 ft. 0 in.	91 ft. 7 in.	92 ft. 0 in.
Load draught, mean	28 ft. 0 in.	28 ft. 9 in.	28 ft. 6 in.	27 ft. 0 in.	28 ft. 6 in.	28 ft. 6 in.
Displacement in tons	25,000	27,500	25,750	27,500	23,000	28,000
Shaft horse-power of engines	29,000	75,000	40,000	34,000	26,500	37,000
Speed at load draught (knots)	21	25	23	22	21	22½
Fuel at load draught (tons)	900	650	900	1,500	900	1,150
Coal capacity (tons)	3,250	.....	.....	3,200	2,120	3,300
Oil fuel capacity (tons)	1,050	3,400	3,400	620	710	520
Armament	10 13.5 in. 12 6 in. 4 21 in. T.T.	8 15 in. 12 6 in. 4 21 in. T.T.	8 15 in. 14 6 in. 4 21 in. T.T.	14 12 in. 20 6 in. 2 21 in. T.T.	10 13.5 in. 16 6 in. 4 21 in. T.T.	10 14 in. 14 6 in. 4 21 in. T.T.
Armor — Side, amidships	12 in., 9 in. 8 in.	13 in., 6 in.	13 in., 6 in.	9 in., 6 in.	12 in., 9 in., 8 in.	9 in., 7 in., 4½ in.
Side, forward and aft	6 in., 4 in.	6 in., 4 in.	6 in., 4 in.	6 in., 4 in.	6 in., 4 in.	6 in., 4 in.
Bulkheads, forward and aft	8 in., 6 in., 4 in.	6 in., 4 in.	6 in., 4 in.	6 in., 3 in.	8 in., 5 in., 4 in.	4½ in., 4 in.
Barbettes	10 in. to 3 in.	10 in. to 4 in.	10 in. to 4 in.	9 in. to 3 in.	10 in. to 3 in.	10 in. to 4 in.
Gun-houses	11 in.	11 in.	11 in.	12 in., 8 in.	11 in.	10 in.
Conning tower	11 in.	11 in.	11 in., 6 in.	12 in.	12 in.	11 in.
Protection — Vertical plating	1½ in., 1 in.	2 in., 1 in.	1½ in., 1 in.	1½ in., 1 in.	1½ in.	2 in., 1½ in.
Forecastle deck	1 in. amidships	1 in.	1 in.	1½ in. amidships	1½ in. amidships	1 in. amidships
Upper deck	2 in. to 1½ in.	2 in. to 1½ in.	1½ in. to 1½ in.	1½ in.	1½ in.	1½ in.
Main deck	1½ in. at ends	1½ in. at ends	2 in., 1½ in., 1 in.	1½ in., 1 in. at ends	1½ in.	1½ in. aft
Middle deck	2½ in., 1 in.	1 in. amidships	2 in. slope main to middle	1½ in., 1 in.	3 in., 1 in.	1 in.
Lower deck	2½ in., 1 in.	3 in., 1 in.	1 in., 2½ in., 3 in., 4 in.	2½ in., 1 in.	.....	4 in., 2 in.

	Submarines					
	"E" class	"G" class	"H" class	"J" class	"K" class	"L" class
Length between perpendiculars	180 ft. 0 in.	185 ft. 0 in.	164 ft. 6 in.	270 ft. 0 in.	334 ft. 0 in.	222 ft. 0 in.
Length overall	181 ft. 0 in.	187 ft. 0 in.	171 ft. 0 in.	275 ft. 0 in.	338 ft. 0 in.	231 ft. 0 in.
Breadth, extreme	22 ft. 6 in.	22 ft. 6 in.	15 ft. 9 in.	23 ft. 0 in.	26 ft. 6 in.	23 ft. 6 in.
Load draught, mean	12 ft. 6 in.	13 ft. 3 in.	11 ft. 3 in.	14 ft. 0 in.	16 ft. 0 in.	13 ft. 6 in.
Displacement in tons, surface	660	700	440	1,210	1,880	890
Displacement in tons, submerged	800	975	500	1,820	2,650	1,070
Shaft horse-power of engines, surface	1,600	1,600	480	3,600	10,000	2,400
Shaft horse-power of engines, submerged	840	840	320	1,350	1,400	1,600
Speed at load draught (knots), surface	15	14	13	19	24	17½
Speed at load draught (knots), submerged	10	10	10½	9½	9	10½
Oil fuel capacity (tons)	45	44	16	91	200	76
Armament	1 3 in. 5 18 in. T.T.	1 3 in. 4 18 in., 1 21 in. T.T.	..... 4 21 in. T.T.	1 3 in. or 4 in. 6 18 in. T.T.	1 4 in., 1 3 in. H.A. 8 18 in. T.T.	1 3 in. or 4 in. 6 18 in. T.T.

* From paper by Sir Eustace Tennyson d'Eyncourt published in 'Transactions' of Institution of Naval Architects, Vol. LXI.

TABLE IX — *Continued*

	Battle Cruisers		Large Light Cruisers		Light Cruisers			
	Tiger	Renown	Courageous	Furious	Arethusa	Calliope	"D" Class	Raleigh
Length between perpendiculars	660 ft. 0 in.	750 ft. 0 in.	735 ft. 0 in.	735 ft. 0 in.	410 ft. 0 in.	420 ft. 0 in.	445 ft. 0 in.	565 ft. 0 in.
Length over all	704 ft. 0 in.	794 ft. 0 in.	786 ft. 3 in.	786 ft. 6 in.	436 ft. 0 in.	446 ft. 0 in.	471 ft. 0 in.	605 ft. 0 in.
Breadth, extreme	90 ft. 6 in.	90 ft. 0 in.	81 ft. 0 in.	88 ft. 0 in.	39 ft. 0 in.	41 ft. 6 in.	46 ft. 0 in.	65 ft. 0 in.
Load draught, mean	28 ft. 6 in.	25 ft. 6 in.	22 ft. 3 in.	21 ft. 6 in.	13 ft. 6 in.	13 ft. 6 in.	14 ft. 3 in.	17 ft. 3 in.
Displacement in tons	28,500	26,500	18,600	19,100	3,500	3,750	4,650	9,750
Shaft horse-power of engines	108,000	112,000	90,000	90,000	40,000	40,000	40,000	40,000
Speed at load draught (knots)	30	32 nearly	32	31½	29	29	29	30
Fuel at load draught (tons)	900	1,000	750	750	260	300	300	1,000
Coal capacity (tons)	3,320	.....	.....	.....	.....	.....	.....	800
Oil fuel capacity (tons)	3,480	4,250	3,250	3,400	810	920	1,050	1,600
Armament	8 13.5 in. 12 6 in. 4 21 in. T.T.	6 15 in. 17 4 in. 2 21 in. T.T.	4 15 in. 18 4 in. 14 21 in. T.T.	..... 10 5.5 in. 18 21 in. T.T.	2 6 in. 7 4 in. (1 H.A.) 8 21 in. T.T.	2 6 in. 8 4 in. 4 21 in. T.T.	6 6 in. 2 3 in. H.A. 12 21 in. T.T.	7 7.5 in. 12 3 in. (4 H.A.) 6 21 in. T.T.
Armor — Side, amidships	9 in., 6 in., 5 in.	6 in., 1½ in.	3 in.	3 in.	3 in.	3 in.	3 in.	3 in., 2 in.
Side, forward and aft	4 in.	4 in., 3 in.	2 in. forward	2 in. forward	2 in., 1½ in.	2 in., 1½ in.	2 in., 1½ in., 1½ in.	2½ ins., 1½ in.
Bulkheads, forward and aft	4 in., 2 in.	4 in., 3 in.	3 in., 2 in.	3 in., 2 in.	.....	.....	1 in. aft	1 in. aft
Barbettes	9 in. to 3 in.	7 in. to 4 in.	7 in. to 3 in.	7 in. to 3 in.	.....	.....	....	.....
Gun houses	9 in.	11 in. to 7 in.	9 in., 7 in.	7 in.	.....	.....	.....	.....
Conning tower	10 in.	10 in.	10 in.	10 in.	6 in.	6 in.	.....	3 in.
Protection — Vertical plating	2½ in., 1½ in., 1 in.	1½ in.	1½ in., 1 in.	1 in.	.....	.....	.....	.....
Forecastle deck	1½ in., 1 in.	1½ in., 1½ in.	1 in.	1 in.	.....	.....	.....	.....
Upper deck	1½ in., 1 in.	½ in.	1 in.	1 in.	1 in. amidships	1 in. amidships	1 in. amidships	1 in. amidships
Main deck	1 in. at ends	3 in. to 1 in.	1½ in., ½ in.	1½ in., ½ in.	.....	.....	.....	.....
Middle deck	.....	.....	.....	.....	.....	.....	.....	.....
Lower deck	3 in., 1 in.	2½ in.	3 in., 1 in.	3 in., 1 in.	1 in. aft	1 in. aft	1 in. aft	1 in. aft

	Torpedo-Boat Destroyers			T.B.D. Flotilla Leaders		Patrol Boats
	"M" class	"R" and "S" classes	"V" and "W" classes	Kempenfelt class	Scott class and Shakespeare class (approximately same)	"P" class
Length between perpendiculars	265 ft. 0 in.	265 ft. 0 in.	300 ft. 0 in.	315 ft. 0 in.	320 ft. 0 in.	230 ft. 0 in.
Length overall	273 ft. 4 in.	276 ft. 0 in.	312 ft. 0 in.	325 ft. 0 in.	332 ft. 6 in.	244 ft. 6 in.
Breadth, extreme	26 ft. 8 in.	26 ft. 8 in.	29 ft. 6 in.	31 ft. 9 in.	31 ft. 9 in.	23 ft. 9 in.
Load draught, mean	8 ft. 8 in.	9 ft. 0 in.	9 ft. 0 in.	10 ft. 0 in.	10 ft. 6 in.	7 ft. 7 in.
Displacement in tons	1,025	1,065	1,300	1,650	1,800	573
Shaft horse-power of engines	25,000	27,000	27,000	36,000	40,000 to 44,000	4,000
Speed at load draught (knots)	34	36	34	34	36	22
Fuel at load draught (tons)	140	150	185	255	250	50
Coal capacity (tons)	.....	.....	.....	.....	.....	.....
Oil fuel capacity (tons)	280	300	370	515	500	93
Armament	3 4 in. 1 2-pounder 4 21 in. T.T.	3 4 in. 1 2-pounder 4 21 in. T.T.	4 4 in. or 4.7 in. 1 3 in. 4 or 6 21 in. T.T.	4 4 in. 2 2-pounders 4 21 in. T.T.	5 4.7 in. 1 3 in. H.A. 6 21 in. T.T.	1 4 in. 1 2-pounder 2 14 in. T.T.

TABLE IX — *Concluded*

	Monitors						
	Humber	14-in. gun class	12-in. gun class	Marshal Soult	Erebus	9.2-in. gun class	6-in. gun class
Length between perpendiculars	261 ft. 6 in.	320 ft. 0 in.	320 ft. 0 in.	340 ft. 0 in.	380 ft. 0 in.	170 ft. 0 in.	170 ft. 0 in.
Length over all	266 ft. 9 in.	334 ft. 6 in.	335 ft. 6 in.	355 ft. 8 in.	405 ft. 0 in.	177 ft. 0 in.	177 ft. 0 in.
Breadth, extreme	49 ft. 0 in.	90 ft. 0 in.	87 ft. 0 in.	90 ft. 3 in.	88 ft. 0 in.	31 ft. 0 in.	31 ft. 0 in.
Load draught, mean	4 ft. 9 in.	10 ft. 0 in.	10 ft. 0 in.	10 ft. 3 in.	11 ft. 0 in.	6 ft. 0 in.	4 ft. 0 in.
Displacement in tons	1,260	6,150	5,900	6,670	8,000	540	355
Shaft horse-power of engines	1,450	2,000	2,300 to 2,500	1,500	6,000	480 to 800	400
Speed at load draught (knots)	12	6 to 7	6 to 7	6 to 7	12	12 to 13	10
Fuel at load draught (tons)	50	200	200	100	220	.....	.....
Coal capacity (tons)	187	400	350	.....	.....	.....	.....
Oil fuel capacity (tons)	90	.....	.....	235	750	30	45
Armament	3 6 in. 2 4.7-in. howitzers	2 14 in. 1 6 in.	2 12 in. 1 to 4 6 in.	2 15 in. 8 4 in.	2 15 in. 8 4 in.	1 9.2 in. 1 3 in.	2 6 in. 1 6-pounder
Armor — Side, amidships	.....	.....	.....	.....	.....	.....	.....
Side, forward and aft	.....	.....	.....	.....	.....	.....	.....
Bulkheads, forward and aft	.....	4 in.	6 in.	4 in.	4 in.	.....	.....
Barbettes	.....	8 in. to 2 in.	8 in. to 2 in.	8 in.	8 in.	.....	.....
Gun-houses	.....	10 in., 7 in., 4 in.	10½ in., 5½ in., 4 in., 2 in.	13 in., 11 in., 4½ in.	13 in., 11 in., 4½ in.	.....	.....
Conning tower	.....	6 in.	6 in.	6 in.	6 in.	.....	.....
Protection — Vertical plating	.....	1½ in.	1 in.	1 in.	1 in.	.....	.....
Forecastle deck	.....	1 in.	1 in.	1 in.	1 in.	.....	.....
Upper deck	.....	2 in. to 4 in. on slope	2 in. to 6 in. on slope	1½ in., 2 in. to 4 in. on slope	2 in. to 4 in. on slope	.....	.....
Main deck	.....	1½ in., 1 in.	1½ in., 1 in.	1½ in., 1 in.	1½ in., 1 in.	.....	.....
Middle deck	.....	.....	.....	.....	.....	.....	.....
Lower deck	.....	.....	.....	.....	.....	.....	.....

	Sloops and Mine-Sweepers			"China" Gunboats	
	Single-screw sloops, "Flower" class	Paddle mine-sweepers	Twin-screw mine-sweepers	"Fly" class	"Insect" class
Length between perpendiculars	255 ft. 3 in.	235 ft. 0 in.	220 ft. 0 in.	120 ft. 0 in.	230 ft. 0 in.
Length overall	267 ft. 9 in.	245 ft. 9 in.	231 ft. 0 in.	126 ft. 0 in.	237 ft. 6 in.
Breadth, extreme	33 ft. 6 in.	29 ft. 0 in. (58 ft. over paddles)	28 ft. 0 in.	20 ft. 0 in.	36 ft. 0 in.
Load draught, mean	11 ft. 0 in.	6 ft. 9 in.	7 ft. 0 in.	2 ft. 0 in.	4 ft. 0 in.
Displacement in tons	1,250	810	750	98	645
Shaft horse-power of engines	2,400	1,400	1,800	175	2,000
Speed at load draught (knots)	17	15	16	10	14
Fuel at load draught (tons)	130	.....	.....	.....	.....
Coal capacity (tons)	260	150	140	5	35
Oil fuel capacity (tons)	.....	.....	.....	10	54
Armament	2 4 in. or 4.7 in. 2 3-pounders	1 3 in. 1 6-pdr., 2 2-pdr.	1 3 in. 1 6-pdr., 2 2-pdr.	1 4 in. 1 3 in., 1 6-pdr.	2 6 in. 2 3 in.
	.....	.....	.....	.....	.....

TABLE X

* Effective Fighting Ships Built and Building

The rapidly diminishing value of the older battleships and first-class or armored cruisers makes them no longer effective. The United States and other Powers retain ships long on their lists, and therefore British ships are kept here for purposes of comparison.

Class	Great Britain			United States			France			Italy			Japan			Germany			Austria			Russia		
	Built	Building	Total	Built	Building	Total	Built	Building	Total	Built	Building	Total	Built	Building	Total	Built	Building	Total	Built	Building	Total	Built	Building	Total
BATTLESHIPS:																								
Modern	35	..	35	17	6	23	12	5	17	6	4	10	7	2	9	19	[2]2	21	2	..	2	8	..	..
Battle-cruisers	9	1	10	..	6	6	..	..	..	..	..	..	4	..	4	5	1	6	..	..	..	..	4	4
Older battleships	6	..	6	13	..	13	5	..	5	4	..	4	6	..	6	9	..	9	..	..	..	4	..	4
CRUISERS:																								
1st class	19	..	19	12	..	12	15	..	15	5	..	5	12	..	12	..	..	..	..	..	..	3	..	3
Light	77	13	90	3	10	13	3	..	3	6	..	6	8	..	8	24	4	28	..	..	..	3	8	11
DESTROYERS	[1]282	108	390	95	231	[3]326	76	20	96	48	10	58	89	..	..	..	..	..	..	..	..	122	..	122
SUBMARINES	..	..	..	59	63	122	88	..	..	73	8	81	26	..	..	..	..	..	..	..	..	32	..	32

*Brassey's Naval Annual, 1919 edition.

[1] Excluding 97 destroyers of classes A to F. A number of destroyers have been completed since this table was made up early in April, 1919. [2] The Mackensen battle-cruiser is the only German ship that may be completed. The other vessels indicated in this column will not be proceeded with. [3] Twelve destroyers projected.

The destroyer and submarine figures given for Russia represent the situation before the war, except that vessels known to have been lost have been removed from the lists.

TABLE XI

Summary of Vessels Fit for Service and Under Construction in the United States Navy, 1 July 1906 to 1911 *

Fit for service, including those under repair †

Type	1906		1907		1908		1909		1910		1911	
	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement
		Tons		*Tons*		*Tons*		*Tons*		*Tons*		*Tons*
First-class battleships	16	198,250	22	292,146	25	334,146	25	334,146	29	406,146	29	406,146
Second-class battleships	1	6,315	1	6,315	1	6,315	1	6,315	1	6,315	..	.....
Armored cruisers	4	54,720	6	83,720	9	125,580	10	140,080	10	140,080	10	140,080
First-class cruisers	3	27,065	5	46,465	5	46,465	5	46,465	5	46,465	5	46,465
Armored ram	1	2,183	1	2,183	1	2,183	1	2,183	..	.....	..	.....
Single-turret monitors	4	12,900	4	12,900	4	12,900	4	12,900	4	12,900	4	12,900
Double-turret monitors	6	26,104	6	26,104	6	26,104	6	26,104	6	26,104	6	26,104
Protected cruisers	19	76,070	19	76,070	19	76,070	18	71,987	18	71,987	17	67,574
Unprotected cruisers	3	6,216	3	6,216	3	6,216	3	6,216	3	6,216	2	4,144
Scout cruisers	..	.....	..	.....	2	7,500	3	11,250	3	11,250	3	11,250
Gunboats	9	11,564	9	11,564	9	11,564	9	11,564	8	10,387	7	8,677
Light-draft gunboats	3	4,155	3	4,155	3	4,155	3	4,155	3	4,155	3	4,155
Composite gunboats	8	8,190	8	8,190	8	8,190	8	8,190	8	8,190	8	8,190
Training ship, sheathed	1	1,175	1	1,175	1	1,175	1	1,175	..	.....	..	.....
Training ships, steel	..	.....	2	3,600	2	3,600	2	3,600	2	3,600	2	3,600
Training brigantine	1	346	1	346	1	346	1	346	1	346	1	346
Special class	2	2,416	2	2,416	2	2,416	2	2,416	2	2,416	2	2,416
Gunboats under 500 tons	15	3,603	13	3,265	12	3,095	12	3,095	12	3,095	9	2,439
Torpedo-boat destroyers	16	6,695	16	6,695	16	6,695	16	6,695	21	10,195	33	19,099
Steel torpedo boats	35	5,737	35	5,737	35	5,737	33	5,299	33	5,299	31	5,111
Wooden torpedo boat	1	31	1	31	1	31	1	31	1	31	..	.....
Submarine torpedo boats	8	935	8	935	12	1,719	12	1,719	18	3,485	18	3,748
Iron steam vessels	5	5,861	4	3,606	3	3,056	3	3,056	3	3,056	3	3,056
Wooden steam vessels	5	8,840	5	8,840	5	8,840	5	8,840	3	5,565	3	5,565
Wooden sailing vessels	8	10,045	8	10,045	5	5,895	5	5,895	5	5,895	4	5,620
Tugs	41	13,060	40	12,703	41	13,606	42	14,361	43	15,133	44	15,833
Auxiliary cruisers	5	28,339	5	28,339	4	24,959	4	24,959	4	24,959	4	24,959
Converted yachts	23	11,881	23	11,872	22	11,750	21	11,453	19	10,421	18	10,106
Colliers	15	79,504	15	79,504	15	79,504	15	79,504	20	140,067	20	155,112
Submarine tenders	..	.....	1	357	2	807	2	807	4	4,702	5	6,771
Mine-laying ship	..	.....	..	.....	..	.....	1	4,083	1	4,083	1	4,083
Repair ship	..	.....	..	.....	1	3,380	1	3,380	1	3,380	1	3,380
Transports and supply ships	11	53,247	10	50,571	9	50,084	8	44,384	8	44,384	8	44,384
Hospital ships	1	3,300	1	3,300	1	3,300	2	9,000	2	9,000	2	9,000
Receiving ships	4	18,995	5	21,250	5	21,250	4	18,995	4	18,995	5	23,408
Prison ships	2	4,850	2	4,850	2	4,850	3	7,105	3	7,105	3	7,105
Total	276	692,592	285	835,465	292	923,483	292	941,753	308	1,075,407	311	1,090,826

*** Data from official publication, United States Navy Department.**

† Taken from the 1911 edition; classification changes in the 1912 edition.

TABLE XII

Summary of Vessels Fit for Service and Under Construction in the United States Navy, 1 July 1906 to 1911 *

Under construction

Type	1906		1907		1908		1909		1910		1911	
	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement
		Tons		*Tons*		*Tons*		*Tons*		*Tons*		*Tons*
First-class battleships	9	135,896	5	74,000	4	72,000	6	115,650	4	95,650	6	149,650
Armored cruisers	6	85,360	4	56,360	1	14,500	..	.....	..	.....	..	.....
First-class cruisers	2	19,400	..	.....	..	.....	..	.....	..	.....	..	.....
Scout cruisers	3	11,250	3	11,250	1	3,750	..	.....	..	.....	..	.....
Training ships, steel	2	3,600	..	.....	..	.....	..	.....	..	.....	..	.....
Torpedo-boat destroyers	..	.....	..	.....	5	3,500	20	14,630	15	11,130	9	6,678
Submarine torpedo boats	4	784	4	784	7	2,103	16	5,890	10	4,124	17	7,732
Tugs	..	.....	2	1,510	2	1,510	1	755	..	.....	..	.....
Colliers	..	.....	2	25,170	2	25,170	6	78,220	2	38,735	2	38,735
Total	26	256,290	20	169,074	22	122,533	49	215,145	31	149,639	34	202,795

* Taken from the 1911 edition; classification changes in the 1912 edition. Data from official publication, United States Navy Department.

TABLE XIII

Summary of Vessels Fit for Service and Under Construction in the United States Navy, 1 July 1912 to 1916 *

Fit for Service, Including Those Under Repair

Type	1912		1913		1914		1915		1916	
	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement
		Tons		*Tons*		*Tons*		*Tons*		*Tons*
Battleships, single calibre	6	115,650	8	167,650	10	221,650	10	221,650	13	308,050
Battleships, mixed calibre	25	334,146	25	334,146	25	334,146	23	308,146	23	308,146
Armored cruisers	10	140,080	10	140,080	10	140,080	10	140,080	10	140,080
Cruisers, first class	5	46,465	5	46,465	5	46,465	5	46,465	5	46,465
Cruisers, second class	6	33,561	4	25,065	4	25,065	4	25,065	4	25,065
Cruisers, third class	15	48,748	15	48,748	15	48,748	15	48,748	16	50,820
Monitors	10	39,004	9	32,944	9	32,944	9	32,944	7	24,964
Destroyers	23	16,856	26	19,082	34	27,300	37	30,472	47	41,403
Coast torpedo vessels	16	6,695	16	6,695	16	6,695	16	6,695	16	6,695
Torpedo boats	28	4,821	26	4,446	19	3,365	19	3,365	18	3,300
Submarines	22	5,229	24	6,421	30	9,322	36	12,338	38	13,580
Tenders to torpedo vessels	7	20,661	7	20,661	6	19,484	7	20,892	8	31,927
Gunboats	27	25,078	27	25,078	30	27,890	30	27,890	28	25,937
Transports	5	26,595	5	26,595	5	26,595	5	26,595	4	22,235
Supply ships	4	25,400	4	25,400	4	25,400	4	25,400	4	25,400
Hospital ships	2	9,000	2	9,000	2	9,000	2	9,000	1	5,700
Fuel ships	19	160,313	21	205,352	22	237,051	23	251,581	20	239,430
Converted yachts	17	9,634	17	9,634	16	9,476	16	9,476	14	8,957
Tugs	44	15,884	45	18,024	45	18,024	45	18,024	47	19,431
Special type	6	26,335	8	48,333	8	43,333	8	43,333	8	45,904
Unserviceable for war purposes	26	59,421	22	50,771	21	47,501	19	43,976	21	46,291
Total	323	1,169,576	326	1,270,590	336	1,359,534	343	1,352,135	352	1,439,780
Under Construction										
Battleships, first line	6	161,000	5	140,400	4	117,800	7	213,800	6	192,000
Destroyers	11	10,496	14	14,580	12	12,992	15	16,442	11	12,093
Submarines	17	8,268	22	11,555	20	10,673	22	11,839	35	20,311
Tenders to torpedo vessels	1	1,408	1	1,408	3	12,138	2	10,730	....	.....
Transports	....	.....	....	.....	1	10,000	1	10,000	1	10,000
Supply ship	....	.....	....	.....	1	8,500	1	8,500	1	8,500
Gunboats	....	.....	3	1,805	....	.....	....	.....	....	.....
Fuel ships	5	95,624	4	67,000	2	29,000	2	29,000	2	29,000
Tugs	2	2,240	....	.....	....	.....	....	.....	2	1,150
Total	42	279,036	49	236,748	43	201,103	50	300,311	58	273,054

* Battleship and destroyer figures adjusted to conform with the 1916 classification. Data from official publications United States Navy Department.

TABLE XIV

Summary of Vessels Fit for Service and Under Construction in the United States Navy *

Type	Fit for service, including those under repair [1]						Under construction					
	1 July 1917		1 July 1918		1 July 1919 [2]		1 July 1917		1 July 1918		1 July 1919 [2]	
	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement
		Tons		*Tons*		*Tons*		*Tons*		*Tons*		*Tons*
Battleships, single calibre	14	339,450	16	403,450	17	435,450	9	291,000	7	227,000	10	367,800
Battleships, mixed calibre	23	308,146	23	308,146	23	308,146	...	...	...	...	...	...
Battle cruisers	...	...	...	...	...	...	5	176,500	5	176,500	6	[5] 261,000
Armored cruisers	9	125,580	9	125,580	8	111,900	...	...	...	...	...	...
Monitors	7	24,964	7	24,964	7	24,964	...	...	...	...	...	...
Cruisers, first class	5	46,465	4	36,765	4	36,765	...	...	...	...	...	...
Subtotal, armored	58	844,605	59	898,905	59	917,225	14	467,500	12	403,500	16	628,800
Cruisers, second class	4	25,065	4	25,065	4	25,065	1	7,100	4	28,400	10	71,000
Cruisers, third class	15	47,820	15	47,820	15	47,820	...	...	...	...	...	...
Destroyers	52	46,886	65	61,528	159	172,986	62	73,128	263	316,086	166	201,600
Coast torpedo vessels	16	6,695	15	6,275	15	6,275	...	...	...	...	...	...
Torpedo boats	17	3,146	17	3,146	12	2,041	...	...	...	...	...	...
Submarines	44	13,602	57	19,231	93	40,554	71	42,041	91	61,340	65	52,476
Gunboats	37	34,410	37	34,410	37	34,410	1	1,575	2	3,150	2	3,150
Patrol vessels	...	...	...	...	15	7,500	...	...	100	50,000	45	22,500
Submarine chasers	...	...	304	23,408	321	24,717	305	23,485	42	3,234	...	...
Subtotal, unarmored fighting ships	185	177,624	514	220,883	671	361,368	440	147,329	502	462,210	288	350,726
Tenders	6	24,717	16	93,990	17	99,960	...	...	...	...	...	...
Mine sweepers	...	...	4	3,800	40	38,000	3	2,850	50	47,500	9	8,550
Converted yachts	14	8,957	12	8,711	10	8,711	...	...	...	...	...	...
Transports [1]	5	57,295	5	57,295	3	19,615	...	...	...	...	...	...
Supply ships	5	33,900	5	33,900	6	43,500	...	...	...	...	...	...
Hospital ships	1	5,700	7	37,497	6	36,297	1	9,800	1	9,800	1	9,800
Fuel ships	22	268,349	21	248,989	21	248,989	1	14,800	1	14,800	15	236,650
Special service	8	45,904	13	83,891	6	29,611	1	10,600	1	10,600	3	31,200
Tugs	49	20,758	50	22,572	57	24,922	2	2,000	65	33,600	18	18,000
Unserviceable for war purposes	20	45,116	15	43,356	14	41,101	...	...	...	...	...	...
Subtotal, nonfighting ships	130	510,696	148	634,001	180	590,706	8	40,050	118	116,300	46	304,200
Total	373	1,532,925	721	1,753,789	910	1,869,299	462	654,879	632	982,010	350	1,283,726

* Data from official publications, United States Navy Department.
[1] Does not include vessels in temporary war service.
[2] Includes purchased vessels added to navy list.
[3] Exclusive of 2 battleships, 12 destroyers, 9 fleet submarines, 1 transport, 1 destroyer tender, and 1 submarine tender, in three-year program for which contracts have not yet been placed.
[4] Estimated.
[5] Design modified, with increased displacement.

TABLE XV

Summary of Vessels in the United States Navy, 1 October 1919 *

Type	Fit for service including those under repair		Under construction		Authorized but not yet placed		Total	
	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement
		Tons		*Tons*		*Tons*		*Tons*
Battleships, single calibre	17	435,450	12	454,200	...	...	29	889,650
Battleships, mixed calibre	23	308,146	...	...	...	...	23	308,146
Battle cruisers	...	...	6	261,000	...	...	6	261,000
Armored cruisers	8	111,900	...	...	...	...	8	111,900
Monitors	6	20,974	...	...	...	...	6	20,974
Cruisers, first class	4	36,765	...	...	...	...	4	36,765
Subtotal, armored	58	913,235	18	715,200	...	...	76	1,628,435

* Data from official publications United States Navy Department.

TABLE XV — *Concluded*

Type	Fit for service including those under repair		Under construction		Authorized but not yet placed		Total	
	Number	Displacement	Number	Displacement	Number	Displacement	Number	Displacement
		Tons		*Tons*		*Tons*		*Tons*
Cruisers, second class	4	25,065	10	71,000	.....	.....	14	96,065
Cruisers, third class	14	45,748	.....	.....	.....	.....	14	45,748
Destroyers	184	205,865	136	164,684	12	14,580	332	385,129
Submarines	99	49,953	58	49,641	9	(2)	166	[2] 99,594
Gunboats	30	30,110	2	3,150	.....	.....	32	33,260
Patrol vessels	52	26,000	8	4,000	.....	.....	[5] 60	30,000
Submarine chasers [1]	176	13,552	.....	.....	.....	.....	176	13,552
Subtotal, unarmored fighting ships	559	396,293	214	292,475	21	14,580	794	703,348
Tugs and mine sweepers	105	68,520	20	19,700	.....	.....	125	88,220
Converted yachts	5	5,398	.....	.....	.....	.....	5	5,398
Auxiliaries — fuel ships	20	227,560	15	236,600	.....	.....	35	464,160
Auxiliaries — special type	44	283,505	5	51,600	[3] 2	21,200	51	356,305
Miscellaneous — transports, etc	4	23,615	.....	.....	[4] 1	10,000	5	33,615
Unserviceable for war purposes	16	34,605	.....	.....	.....	.....	16	34,605
Subtotal, nonfighting ships	194	643,203	40	307,900	3	31,200	237	982,303
Total	811	1,952,731	272	1,315,575	24	45,780	1,107	3,314,086

[1] Does not include chasers scheduled for sale or other disposition.
[2] Does not include displacement of 9 fleet submarines.
[3] One destroyer tender and 1 submarine tender.
[4] Transport.
[5] Includes 5 vessels turned over to Coast Guard Service since 1 Oct. 1919.

WARSHIPS, War Losses in.—In the Great War the principle belligerents lost the following tonnage in war vessels:

UNITED STATES

Ships	*Class*	*Tonnage*	*Date*
Jacob Jones	Destroyer	1,265 gross	6 Dec. 1917
Westover	Army supply	8,800 gross	11 July 1918
Buena Ventura	Army cargo	4,881 gross	16 Sept. 1918
Minnesota	Battleship	16,000 displacement	29 Sept. 1918
Mohawk	Revenue cutter	1,148 displacement	1 Oct. 1917
Chauncey	Destroyer	592 displacement	19 Nov. 1917
S. C. No. 141	Submarine chaser	75 gross	13 Dec. 1917
F. 1	Submarine	.....	17 Dec. 1917
Zaanland	Cargo	5,417 gross	13 May 1918
Schurz	Cruiser	1,630 displacement	21 June 1918
S. C. No. 187	Submarine chaser	75 gross	4 Aug. 1918
S. C. No. 60	Submarine chaser	75 gross	1 Oct. 1918
S. C. No. 397	Submarine chaser	75 gross	5 Oct. 1918
Shaw	Destroyer	1,100 displacement	9 Oct. 1918
Tarantula	Special patrol	.....	28 Oct. 1918
Rehoboth	Armed trawler	254 gross	8 Oct. 1917
S. C. No. 117	Submarine chaser	75 gross	22 Dec. 1917
No. 3429	Motor patrol	.....	10 July 1918
Montauk	Patrol boat	641 gross	21 Aug. 1918
S. C. No. 209	Submarine chaser	75 gross	27 Aug. 1918
S. C. No. 219	Submarine chaser	75 gross	9 Oct. 1918
Lake Borgne	Army account	2,100 gross	22 Oct. 1918

ENGLAND

Battleships	*Tonnage*	*Date*
Audacious	24,000	29 Oct. 1914
Bulwark	15,000	25 Nov. 1914
Formidable	15,000	1 Jan. 1915
Irresistible	15,000	18 Mar. 1915
Ocean	12,950	18 Mar. 1915
Goliath	12,950	12 May 1915
Triumph	11,800	25 May 1915
Majestic	14,900	27 May 1915
King Edward VII	16,350	2 Jan. 1916
Russell	14,000	27 April 1916

ENGLAND — *Continued*

Battleships	*Tonnage*	*Date*
Britannia	.....	9 Nov. 1918
Cornwallis	.....	11 Jan. 1917
Vanguard	.....	9 July 1917
Battle Cruisers		
Queen Mary	27,000	31 May 1916
Indefatigable	18,750	31 May 1916
Invincible	17,250	31 May 1916
Cruisers		
Hogue	12,000	22 Sept. 1914
Cressy	12,000	22 Sept. 1914
Aboukir	12,000	22 Sept. 1914
Hawke	7,350	15 Oct. 1914
Good Hope	14,100	1 Nov. 1914
Monmouth	9,800	1 Nov. 1914
Argyll	10,850	28 Oct. 1915
Natal	13,660	30 Dec. 1915
Defence	14,600	31 May 1916
Warrior	13,660	31 May 1916
Black Prince	13,660	31 May 1916
Hampshire	10,850	6 June 1916
Cochrane	.....	4 Nov. 1918
Drake	.....	2 Oct. 1917
Light Cruisers		
Amphion	3,360	6 Aug. 1914
Pathfinder	2,940	5 Sept. 1914
Pegasus	2,135	20 Sept. 1914
Hermes	5,600	31 Oct. 1914
Arethusa	3,600	14 Feb. 1916
Falmouth	5,250	19 Aug. 1916
Nottingham	5,440	19 Aug. 1916
Brilliant	.....	23 April 1918
Intrepid	.....	23 April 1918
Iphigenia	.....	23 April 1918
Sirius	.....	23 April 1918
Thetis	.....	23 April 1918
Vindictive	.....	10 May 1918

FRANCE

Battleships	*Tonnage*	*Date*
Bouvet	12,000	18 Mar. 1915
Suffren	.....	26 Nov. 1916
Gaulois	.....	27 Dec. 1916
Danton	.....	19 Mar. 1917
Armored Cruisers		
Leon Gambetta	12,352	26 April 1915
Admiral Charner	4,680	8 Feb. 1916

FRANCE — *Continued.*

Cruisers	*Tonnage*	*Date*
Kleber	.....	27 June 1917
Chateaurenault	.....	14 Dec. 1917
Dupetit Thouars	.....	7 Aug. 1918

The French navy lost also among lesser craft the following: 2 gunboats; 1 torpedo gunboat; 1 sloop; 11 destroyers; 10 torpedo boats; 15 submarines; 2 mine layers; 3 auxiliary cruisers; 2 armed merchant cruisers; 1 special vessel. Grand total — 48.

RUSSIA.

Battleships	*Tonnage*	*Date*
Syobodnaya Rossiyu	.....	18 June 1918
Imperatritza Mariya	.....	20 Oct. 1916
Peresvyet	.....	4 Jan. 1917
Ilava	.....	17 Oct. 1917
Armored Cruiser		
Pallada	7,775	11 Oct. 1914
Cruiser		
Chemtchug	3,130	28 Oct. 1914

And in addition: 3 gunboats; 1 armed auxiliary; 2 mine layers; 23 destroyers; 10 submarines; 3 hospital ships; 1 auxiliary cruiser.

JAPAN.

Battleship		*Date*
Kawachi		12 July 1918
Battle Cruiser		
Tsukuba		1 Jan. 1917
Light Cruisers		
Kasagi		July 1916
Otowa		July 1917
Takashiho		July 1917

And in addition 2 destroyers; 1 torpedo boat; 1 training ship; 4 special service ships. Grand total — 8.

ITALY.

Battleships	*Tonnage*	*Date*
Benedetto Brin	13,215	28 Sept. 1915
Leonardo da Vinci*	22,022	Aug. 1916
Regina Margherita	.....	11 Dec. 1916
Armored Cruisers		
Amalfi	9,958	7 July 1915
Garibaldi	7,234	18 July 1915

Among lesser craft Italy lost: 1 mine vessel; 1 monitor; 1 flotilla leader; 8 destroyers; 4 torpedo boats; 8 submarines; 1 gunboat; 1 transport; 2 auxiliary cruisers. Grand total—27.
Portugal: One river gunboat.
Rumania: One torpedo boat.
Greece: One destroyer.

* Afterward raised and restored.

GERMANY.

Battleship	*Tonnage*	*Date*
Pommern	12,997	31 May 1916
Battle Cruisers		
Lutzow	28,000	31 May 1916
Goeben (sold to Turkey)	22,635	13 Aug. 1914
Armored Cruisers		
Yorck	9,350	3 Nov. 1914
Scharnhorst	11,420	8 Dec. 1914
Gneisenau	11,420	8 Dec. 1914
Friedrich Karl	8,858	Dec. 1914
Bluecher	15,550	25 Jan. 1915
Prinz Adalbert	8,858	23 Oct. 1915
Smaller Cruisers		
Magdeburg	.....	27 Aug. 1914
Mainz	.....	28 Aug. 1914
Köln	.....	28 Aug. 1914
Ariadne	.....	28 Aug. 1914
Hela	.....	13 Sept. 1914
Karlsruhe	.....	4 Nov. 1914
Emden	.....	9 Nov. 1914
Leipzig	.....	8 Dec. 1914
Nürnberg	.....	8 Dec. 1914
Dresden	.....	14 Mar. 1915
Königsberg	.....	11 July 1915
Undine	.....	7 Nov. 1915
Bremen	.....	17 Dec. 1915
Elbing	.....	31 May 1916
Weisbaden	.....	31 May 1916

GERMANY — *Continued.*

Smaller Cruisers	*Tonnage*	*Date*
Rostock	.....	31 May 1916
Frauenlob	.....	31 May 1916
Light Cruiser		
Elbing	.....	31 May 1916

Among lesser craft Germany lost: 28 mining vessels; 11 gunboats; 60 destroyers; 29 torpedo boats; 197 submarines; 6 mine layers; 20 auxiliary cruisers; including the *Cap Trafalgar* (18,710), 14 Sept. 1914; and the *Kaiser Wilhelm der Grosse* (13,952), 26 Aug. 1914; 2 survey ships; 16 armed auxiliaries; including some of those interned by the United States and other powers.

The ships sent to Scapa Flow, where the scuttling by their crews occurred, were: *von der Tann, Moltke, Kaiser Friedrich der Grosse, Kaiserin, Koenig Albert, Prinz Regent Luitpold, Seidlitz, Koenig, Grosser Kurfurst, Markgraf, Kronprinz Wilhelm, Derfflinger, Hindenburg, Baden, Bayern, Strassburg, Dresden, Emden, Frankfurt, Köln, Nurnberg, Brummer* and *Bremser.*

AUSTRIA-HUNGARY.

Battleships	*Tonnage*	*Date*
Ssent Istvan	.....	10 June 1918
Wien	.....	10 Dec. 1917
Viribus Unitis	.....	1 Nov. 1918
Cruisers		
Zenta	2,264	16 Aug. 1914
Kaiserin Elizabeth	3,937	7 Nov. 1914

Lesser craft lost by Austria included: 1 river monitor; 1 training ship; 5 destroyers; and 12 submarines. Grand total — 19

TURKEY.

Battleships	*Tonnage*	*Date*
Mussudyeh	10,000	14 Dec. 1914
Barbaroesa	9,900	8 Aug. 1915
Cruiser		
Medjidieh	3,330	3 April 1915

Minor losses were: 1 light cruiser; 1 armed auxiliary; 13 gunboats; 3 destroyers; 6 torpedo boats; 2 submarines; and 2 mine layers. Grand total —28.

WART, an elevation on the skin, usually a collection of lengthened papillæ, closely adherent and ensheathed by a thick covering of hard dry cuticle. From friction and exposure to the air the surface presents a horny texture and is rounded off into a small button-like shape. Simple warts are commonly seen on the hands and fingers (rarely on the face or elsewhere) of persons of all ages, but especially of children. Among other varieties of warts are (1) the verruca digitata, more elongated in shape and less protected by cuticle than the common wart and which is apt to occur on the scalp, especially in persons of adult age and sometimes occasions great annoyance in brushing and combing the hair; (2) subungual warts, generally of syphilitic origin, growing, as their specific name implies, beneath or at the side of the finger or toe nail and which originate beneath the nail, as they increase crop out either at the free extremity or the side of the nail and are usually troublesome, often very painful; (3) venereal warts, caused by the direct irritation of the discharges of gonorrhœa or syphilis and occurring about the parts which are liable to be polluted with such discharges. These last attain a larger size and are more fleshy and vascular than other warts. It is supposed that warts are always due to some local irritation. Venereal warts are certainly contagious; with regard to others, nothing can be said positively on this point. In consequence of the capricious way in which warts often undergo spontaneous cure, there are numerous popular "charms" for their removal. Common warts are so apt to

disappear that they may be often left to themselves. If it is desired to remove them, glacial acetic acid mav be applied with a camel's hair pencil till the wart is pretty well sodden, care being taken not to blister the neighboring skin. One or at most two applications will usually be sufficient. Nitrate of silver and tincture of iron are popular and general applications. Salicylic acid in collodion is also very effective and so is common concentrated lye. Small warts hanging by a neck may often be very simply removed by the tight application of an elastic ligature to the base. The wart usually shrivels up and falls off within a week. Electrocautery is sometimes successfully employed. The other varieties must be left to the surgeon.

WART-HOG, an extraordinary African swine, several species of which form the genus *Phacochœrus,* and are so named from the presence of a large warty protuberance on each cheek. The *P. œliani* of Northern Africa is familiar in Abyssinia under the names of halluf or haroja. Another species is the vlakte vark (*P. æthiopicus*) of Dutch South Africa, which, like the preceding form, has formidable tusk-like canines and a large wart under each eye. The animal attains a length of three or four feet and is reddish-gray with a stiff blackish mane and spinal stripe. It is fierce and courageous and fights desperately when brought to bay.

WARTA, vär'tä. See WARTHE.

WARTBURG, War of the, a great poetic contest which took place in 1206 or 1207, when the minnesingers assembled at the Wartburg, Germany, for a trial of their skill before Hermann I, landgrave of Thuringia. The poem descriptive of the contest was entitled *Kriec von Wartburg,* and appeared about 1300. It is a singular, wild and inharmonious composition, divided into two parts, and its authorship is unknown. The Wartburg festival was a celebration held at the castle by German students on 18 Oct. 1817, in the third centenary year of the Reformation. Several hundred students from 12 universities were present, and here the colors of the student societies were displayed for the first time. The participators in the festival were suspected of an intention of introducing republicanism into Germany, and after the assassination of Kotzebue a large number of them were arrested and imprisoned, and not long afterward all participation in the student societies was forbidden by the authorities.

WARTBURG (värt'boorg) **CASTLE,** an ancient mountain castle of Germany, not far from Eisenach, belonging to the Grand Duke of Saxe-Weimar. It was built between 1069 and 1072, and was the residence of the landgraves of Thuringia. The elector Frederick the Wise of Saxony caused Luther, who had been outlawed by the Diet of Worms, to be carried thither, where he lived from 4 May 1521 to 6 March 1522, engaged in the translation of the Bible. See LUTHER, MARTIN.

WARTHE, vär'tĕ, or **WARTA,** a European river, the principal tributary of the Oder River. It rises near Kromolov, Russian Poland, and after a northern and western course, enters Prussia at the confluence of the Prosna. It flows westerly and empties into the Oder at Küstrin. Its total length is slightly over 500 miles.

WARTON, Joseph, English poet and critic: b. Dunsfold, Surrey, 1722 (baptized 22 April); d. Wickham, 23 Feb. 1800. He was the son of Thomas Warton the elder and brother of Thomas Warton the younger (q.v.). He studied at his father's grammar school at Basingstoke; then at Winchester, and finally at Oriel College, Oxford, where he was graduated B.A., 13 March 1743-44. During the next 10 years he served successively as curate at Basingstoke, rector of Winslade and rector of Tunworth. Then, in 1755, he became usher, or second master, and in 1766 headmaster of Winchester College. In 1759 he had received from Oxford the degree of M.A.; in 1768 he received those of B.D., and D.D. He remained at Winchester 38 years, but, after suffering three student insurrections, he resigned in 1793 and withdrew to a living at Wickham. There he died, 23 Feb. 1800.

Among English writers of the 18th century, Joseph Warton is significant for being probably the earliest consciously romantic poet. The romanticism evident in his hostility to the cold correctness of the school of Pope, and in his enthusiasm for Spenser, Shakespeare and Milton, appears consistently throughout his works. It appears in 'The Enthusiast; or the Lover of Nature,' written in 1740 when Warton was 18 and included in his first volume 'Ode on reading West's Pindar' (1744).

> "What are the lays of artful Addison,
> Coldly correct, to Shakespeare's warblings wild?
> Whom on the winding Avon's willow'd banks
> Fair Fancy found, and bore the smiling babe
> To a close cavern."

His romanticism he again avows in the advertisement to his second volume 'Odes on Various Subjects' (1746). "The Public has been so much accustomed of late to didactic poetry alone, and essays on moral subjects, that any work where the imagination is much indulged, will perhaps not be relished or regarded. The author therefore of these pieces is in some pain lest certain austere critics should think them too fanciful or descriptive. But as he is convinced that the fashion of moralizing in verse has been carried too far, and as he looks upon invention and imagination to be the chief faculties of a poet, so he will be happy if the following Odes may be looked upon as an attempt to bring back Poetry into its right channel." This romantic creed he states even more completely in his 'Essays on the Genius and Writings of Pope' (1757). This book has been called the "most important of all the critical works that aided the Romantic movement . . . one of the most significant books of the whole century." In it, Warton openly attacked the poetry of Pope; demolished the ideals of the pseudo-classical school, and in their place set up the romantic standards that have since been accepted. It makes Warton, despite the comparative inconsequence of his poetry, one of the most important forerunners of English Romanticism.

His chief works are 'Ode on Reading West's Pindar' (1744); 'Odes on Various Subjects' (1746); an edition of Virgil in Latin and English, to which he contributed translations of the Eclogues and the Georgics (1753); 24 essays, chiefly in literary criticism, contributed to 'The Adventurer' (1753-56); 'Essays

on the Genius and Writings of Pope' (Vol. I, 1757; Vol. II, 1782), and an edition of Pope's works in nine volumes (1797).

ARTHUR H. NASON,
Professor of English, New York University.

WARTON, Thomas, English writer: b. Basingstoke, 9 Jan. 1727 or 28; d. Oxford, 21 May 1790. He was the younger son of Thomas Warton, and brother of Joseph Warton (q.v.). He studied under his father until, at the age of 16, he matriculated, 16 March 1743-44, at Trinity College, Oxford. With this university he was associated for life. Here he received his B.A., in 1747; took orders; became a tutor; received the degree of M.A., in 1750, a fellowship in 1751, and the degree of B.D. in 1767. For two terms of five years each, beginning in 1757, he was professor of Poetry; and in 1785 he was appointed Camden Professor of History of Oxford, and Poet Laureate. In 1771, he was made a Fellow of the London Society of Antiquaries; and from 1782 he was, like his brother Joseph, a member of Dr. Johnson's Literary Club.

Warton's significance in English literature consists in the influence that he exerted in favor of the romantic revival in the 18th century. In his 'Observations on the Faerie Queen of Spenser' (1754), in his critical edition of Milton's early poems, and especially in his great 'History of English Poetry' (1774-81), he demonstrated to all who could understand, that English poetry did not begin with Dryden, and that it might rightfully deal with subjects other than those chosen by the Queen Anne wits. His 'Observations on the Faerie Queen' is a strong plea for romanticism and for a study of Spenser, of chivalry, and of mediæval life. His 'History of English Poetry' embodies, in the clear prose style of Warton's day, a knowledge, rare even in our own, of English poetry from the close of the 11th century to the end of the Elizabethan period. Later scholarship has discovered in Warton's 'History' some errors of detail; but it remains, nevertheless, a monument of wide reading and profound research. In addition to these historical and critical works, Warton promoted the romantic movement by his experiments in the verse-forms and subject matter of Spenser and Milton. Notable among his imitations of the latter are his sonnets, his ode on the 'Approach of Summer,' and his 'Pleasures of Melancholy.'

His chief works are 'The Triumph of Isis' (1749); 'Newmarket, a Satire' (1751); a humorous 'Guide' to Oxford (1760); an anthology of university wit entitled 'The Oxford Sausage' (1764); 'Observations on the Faerie Queen of Spenser' (1754); 'History of English Poetry from the Close of the 11th to the commencement of the 18th Century' (Vol. I, 1774; Vol. II, 1778; Vol. III, 1781; Vol. IV, never published); 'Poems . . . by John Milton . . . with Notes Critical and Explanatory . . .' (1785); a collection of his own poems (1777); fourth edition (1789); and another edition, corrected by himself before his death (1791). Consult his 'Life' by C. Rinaker (Urbana, Ill., 1916).

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WARWICK, wŏr'ĭk, **Guy.** See GUY OF WARWICK.

WARWICK, Richard Neville, EARL OF, English soldier and statesman, known as the "Kingmaker": b. about 1428; d. Barnet, Hertfordshire, 14 April 1471. In the battle of Saint Albans (1455), the opening action of the Wars of the Roses, he fought on the Yorkist, the winning side, and three years later as lord-deputy of Calais and admiral of the fleet gained a splendid success over the Spaniards, but a quarrel between his followers and those of the king led to charges against him which resulted in his taking the field of Ludlow with his cousin, the Duke of York (1459). On being defeated, he withdrew to Calais, and thence in the following summer recrossed to Kent, and mastering London, brought about the compromise by which Henry VI was to reign for life, but York was to be recognized as his successor. Thereupon Margaret of Anjou, routing and slaying York and Salisbury at Wakefield, advanced to Saint Albans, where a second battle ended in Warwick's defeat. Warwick, however, joined the young Earl of March (now Duke of York), and boldly placed him on the throne as Edward IV, then chasing the Lancastrians back to Yorkshire, cut them to pieces on the field of Towton 29 March 1461. Warwick, however, bestowed his daughter on the Duke of Clarence, and after seizing on Edward's person, executing the queen's father and brother, entered upon a scheme for making Clarence king.

Failure drove him once more to France, where, through the mediation of Louis XI, he engaged to restore the crown to Henry VI, with the understanding that Margaret wed her son to Warwick's daughter Anne. His landing in Devonshire came like a clap of thunder to Edward IV, who from the North, where he was busy quelling a revolt, escaped to Burgundy, leaving Warwick master of the kingdom. Edward returned in six months' time, and Warwick with his brother was routed and slain at Barnet.

WARWICK, England, a market-town, capital of Warwickshire, on the right bank of the Avon, nine miles northwest of London. The principal buildings are the church of Saint Mary, the Earl of Leicester's hospital for aged brethren, the shire-hall, jail, museum, endowed grammar school, east and west gates, etc. The chief manufacture is gelatine; and the trade in cattle, corn and provisions is considerable. On the opposite bank of the river, crowning a solid rock, is the ancient and magnificent castle, the residence of the earls of Warwick. The date of the original erection is unknown. Cæsar's Tower, the most ancient part of the structure, is 147 feet high; Guy's Tower, 128 feet high, was erected in 1394. The approach to the grand front exhibits three stupendous towers, and the entrance is flanked with embattled walls covered with ivy. It was partially destroyed by fire in 1871; but the most ancient portion remains uninjured. Pop. 12,500.

WARWICK, N. Y., village in Orange County, on the Wawayanda Creek, and on the Lehigh and Hudson River Railroad, about 30 miles southwest of Newburgh and 10 miles south of Goshen. It is in an agricultural region and near by are iron mines and granite quarries. In the vicinity are the beautiful lakes Glennere, Greenwood, Clark's and Wawayanda. The manufacturing establishments are railroad

shops, a foundry, creameries and fabric-hose works. It has six churches, Warwick Institute, graded schools and a school library. There are two banks. The village is a favorite summer resort. Pop. 2,318.

WARWICK, R. I., town in Kent County, on the Pawtuxet and the Providence rivers, the Cowsett and Narragansett bays and on the New York, New Haven and Hartford Railroad. It is five miles south of Providence. The town includes several villages, in each one of which there are graded schools, and in some, libraries. The largest of these villages is West Warwick, which in 1915 had 15,782 population, and Warwick 13,302. The manufacturing interests, which are large, centre chiefly in West Warwick, which has large cotton mills, machine shops, grist mills, a thread mill and a bleachery. Warwick was settled in 1642 by a colony of 12 Englishmen, under the leadership of Samuel Gorton. The place was first called Shawomet, but in 1848 the name was changed by admirers of the Earl of Warwick. Massachusetts claimed control of the colony and in 1643 one result of the contentions was that the place was nearly destroyed. Indians attacked the place several times, and in 1676 burned a number of houses and wounded many of the defenders of the town. Nathanael Greene (q.v.) was born in Warwick.

WASATCH (wâ'săch) **MOUNTAINS,** a range in Utah, the eastern boundary of the Great Basin, extending from the northern boundary of the State south to the southern edge of the State, approaching the Grand Canon of the Colorado. Several peaks are nearly 12,000 feet high; at the base and among the foot-hills are deep canyons. Silver in large quantities is found in these mountains, also coal. See also ROCKY MOUNTAINS; UTAH.

WASCO (wăs'kō) **INDIANS** ("grass" or "grass people"), a tribe of the Chinookan stock of North American Indians, also known as Dalles Indians and as Wascopums. They formerly claimed the country about The Dalles, on the south bank of Columbia River, in Wasco County, Ore., therefore forming, with the Wushgum or Tlagluit, the easternmost extension of the Chinookan stock. They were participants in the Wasco treaty of 1855 and are now on Warmspring Reservation, Oregon, numbering about 250.

WASECA, wą-sē'ką, Minn., city, county-seat of Waseca County, on Clear Lake, and on the Minneapolis and Saint Louis and the Chicago and Northwestern railroads, about 60 miles south by west of Minneapolis and 25 miles south by east of Mankato. It is in an agricultural and stock-raising region. It has a large roller mill, railroad shops, flour mills, creameries and machine shops. The Minnesota Chautauqua holds its sessions on their grounds bordering on the lake and adjoining the city. There are 12 churches, the Holy Child Jesus Academy, graded public schools, a school library and two newspapers. Pop. 3,054.

WASH, England, a wide estuary on the east coast, between the counties of Lincoln and Norfolk, 22 miles in length and 15 miles in average breadth. It is surrounded by low and marshy shores and receives the Witham, Welland, Ouse and Nen rivers. The estuary for the most part is occupied by sandbanks, dry at low water and intersected by channels through which the rivers flow into the North Sea. On both sides of the channel by which the Ouse falls into the sea considerable tracts of land have been reclaimed. Anchorage is afforded to vessels by two wide spaces or pools of water, called respectively Lynn Deeps, opposite the Norfolk, and Boston Deeps, off the Lincoln coast.

WASH BOTTLE, *in analytical chemistry,* an apparatus used for delivering a fine jet or stream of liquid on to a precipitate for the purpose of washing it, or for removing any residue of a solution or solid particles from one vessel to another. It consists of a flask of hard glass, fitted with a cork or india-rubber stopper perforated in two places. Through each perforation is passed a piece of bent glass tubing, one being carried to within half an inch of the bottom of the flask, and the portion of tubing outside drawn to a fine open point. The other tube is carried just within the bottle, and it is to the outer end of this that the lips are applied in blowing into the apparatus in order to expel the liquid contained in it.

WASHBURN, wŏsh'bėrn, **Cadwallader Colden,** American soldier, son of Israel Washburn (q.v.): b. Livermore, Me., 22 April 1818; d. Eureka Springs, Ark., 14 May 1882. He studied law, was admitted to the bar in 1842 and engaged in practice at Mineral Point, Wis. He founded a bank there in 1852, dealt extensively in real estate and in 1855–61 was a member of Congress. At the outbreak of the Civil War he organized a cavalry regiment, of which he was appointed colonel. He was engaged in the Arkansas campaign, received his commission as major-general of volunteers in 1862, participated in the movements around Vicksburg and later was assigned to command the 13th corps in the Department of the Gulf. He was transferred to Texas with a portion of his command in 1863, captured Fort Esperanza, 29 Nov. 1863, and in 1864 was placed in command of the district of West Tennessee. He was again member of Congress in 1867–71, was governor of Wisconsin in 1871–73 and subsequently engaged in lumber and flour manufacturing. He founded the Washburn Observatory at the University of Wisconsin.

WASHBURN, Charles Ames, son of Israel Washburn (q.v.), American editor and diplomat: b. Livermore, Me., 16 March 1822; d. New York, 26 Jan. 1889. He was graduated at Bowdoin in 1848, went to California in 1850, entered journalism in San Francisco and became editor and proprietor of the Alta *California,* the first newspaper on the Pacific Coast to advocate the principles of the Republican party, of which he was one of the organizers in that State. From 1858 to 1861 he was editor and proprietor of the San Francisco *Daily Times.* In 1860 was chosen elector-at-large, and in the following year was appointed by President Lincoln Minister to Paraguay, a post which he occupied for seven years, covering most of the period of the war between that country and Brazil and her allies. In 1868, under the tyranny of Francisco Solano Lopez (q.v.), many foreigners, as well as Paraguayans, were put to death on an unfounded charge of conspiracy

against the government, and Washburn, on account of his efforts to save the lives of his associates, was accused of complicity in the plot. His life was preserved through the intervention of a United States naval force, the gunboat *Wasp* taking him away from the country. Disagreement with certain naval officers grew out of these incidents, and the circumstances were investigated by the House Committee on Foreign Affairs. The result was Washburn's complete vindication. He published a 'History of Paraguay, with Notes of Personal Observations and Reminiscences of Diplomacy under Difficulties' (1871), giving a graphic account of these events; 'From Poverty to Competence'; 'Graduated Taxation'; 'Political Evolution'; and several novels. He was the inventor of a typograph and other mechanical devices.

WASHBURN, Elihu Benjamin, American diplomat, son of Israel Washburn (q.v); b. Livermore, Me., 23 Sept. 1816; d. Chicago, Ill., 22 Oct. 1887. He was educated at Harvard, admitted to the bar in 1840 and engaged in practice at Galena, Ill. He was a member of Congress from 1852–69, when he was appointed Secretary of State by President Grant, an office he soon afterward resigned in order to become Minister Plenipotentiary to France. He was the only Foreign Minister to remain at his post in Paris throughout the Franco-Prussian War, and the American legation became a refuge for Germans and other foreigners unable to leave the city during the siege of the city and the period of the Commune. His firmness in his course won the gratitude of the European governments and he was granted special honors by the German emperor and Bismarck, as well as by the French leaders, Gambetta and Thiers. He returned home in 1880. He published 'Recollections of a Minister to France' (1887).

WASHBURN, Emory, American jurist: b. Leicester, Mass., 14 Feb. 1800; d. Cambridge, Mass., 17 March 1877. He entered Dartmouth College, and from there went to Williams, where he was graduated in 1817. Admitted to the bar in 1821, he practised in Leicester until 1828, and for the next 30 years in Worcester. Having served in both branches of the Massachusetts legislature, in 1844 he became a justice of the Court of Common Pleas, a position which he held three years. In 1854–55 he was governor of the State. From 1856 to 1876 he served as Bussey professor in the Harvard Law School. Besides lectures, pamphlets, etc., his legal publications include 'American Law of Real Property' (1860) and 'American Law of Easements and Servitudes' (1863).

WASHBURN, George, American educator: b. Middleboro, Mass., 1 March 1833; d. 1915. He was graduated from Amherst in 1855 and from Andover Theological Seminary in 1859. He was appointed professor of philosophy at Robert College, Constantinople, Turkey, in 1868; served as acting president there in 1870–77 and then president to 1903. He was an authority on the politics of southeastern Europe and in recognition of his services in behalf of Bulgarian liberty and the general elevation of the people he received from the first Bulgarian Parliament a vote of thanks, and in 1884 from the Prince of Bulgaria the Order of Saint Alexander. He delivered an address on Mohammedanism at the World's Parliament on Religions at Chicago in 1893, and in 1908 returned to the United States, publishing the following year his 'Fifty Years in Constantinople,' which required several editions.

WASHBURN, Israel, American shipbuilder and trader: b. Raynham, Mass., 18 Nov. 1784; d. Livermore, Me., 1 Sept. 1876. In 1806 he removed to Maine, then a part of Massachusetts, and having a population of about 200,000. Two years later at a place then called White's Landing (now Richmond), on the Kennebec River, he began shipbuilding in partnership with Barzillai White, and in 1809 established a trading-post at Livermore (now in Androscoggin County), where he soon after settled. He reared many children and several of his sons rose to positions of distinction, making the family name conspicuous in American history.

WASHBURN, Israel, Jr., American lawyer and "War Governor," son of the preceding: b. Livermore, Me., 6 June 1813; d. Philadelphia, 12 May 1883. He studied law, was admitted to the bar in 1834, and in the same year settled at Orono, Me., where he practised his profession continuously until 1850, when he was elected to Congress. He was four times re-elected and became prominent among the anti-slavery members of the House in the critical period just before the Civil War. In 1860 he was elected governor of Maine. Re-elected in 1861, he declined a third election, and in 1863 accepted an appointment as collector of customs for the port of Portland, an office which he continued to hold until 1877. During his terms as governor he energetically supported the Federal government by raising, equipping and forwarding troops with a promptness which ensured to Maine an honorable position among the States that upheld the Union cause, and placed his own name in the list of great "War Governors" of the period. In 1875 he was elected to the presidency of Tufts College, but declined the office. He published 'Notes, Historical, Descriptive, and Personal, of Livermore, Maine' (1874), and also contributed frequently to periodicals.

WASHBURN, Margaret Floy, American psychologist: b. New York, 25 July 1871. She was graduated at Vassar College in 1891, and took her Ph.D., at Cornell University in 1894. She was professor of psychology and ethics at Wells College in 1894–1900; warden of Sage College, Cornell, in 1900–02; and assistant professor of psychology at the University of Cincinnati in 1902–03. In 1903–08 she was associate professor of philosophy at Vassar; and since 1908 she has been professor of psychology there. She is author of many contributions to philosophical journals and of 'Animal Mind: Textbook of Comparative Psychology' (1908); 'Movement and Mental Imagery' (1916).

WASHBURN, Samuel Benjamin, American naval officer, son of Israel Washburn (1784–1876) (q.v.): b. Livermore, Me., 1 Jan. 1824. He became a shipmaster in the merchant marine, and later engaged in the lumber trade in Wisconsin. During the Civil War he entered the United States naval service as a volunteer and at the battle of Fort Darling won special commendation for skill and gallantry. Later

he commanded a squadron and performed many valuable services for the government.

WASHBURN, William Drew, American legislator and manufacturer, son of Israel Washburn (q.v.): b. Livermore, Me., 14 July 1831. He was graduated at Bowdoin in 1854, admitted to the bar in 1857, and in that year engaged in law practice in Minnesota. He was a member of the Minnesota legislature in 1859 and in 1871; was surveyor-general in 1861–65; served in Congress in 1879–85; and in 1889–95 was a United States senator. He engaged extensively in the lumber and flour industries, was one of the builders of the Minneapolis, and Saint Louis Railroad, of which he was president until 1889.. He later became president of the Bismarck, Washburn and Great Falls Railroad Company.

WASHBURN, Me., town in Aroostook County, on the Aroostook River, 50 miles north by west of Houlton. It is a distributing centre of considerable importance, although it is eight miles from a railroad station. It is a favorite summer resort. It has three churches, a high school, graded school and public library. Pop. 1,582.

WASHBURN, Wis., city, county-seat of Bayfield County, on Lake Superior and on the Northern Pacific and the Chicago and Northwestern railroads, about 50 miles east of Superior and 200 miles northeast of Minneapolis, Minn. In 1665 a Jesuit mission was established in the place now occupied by the city. Washburn's first permanent settlement was made in 1883, and in 1884 it was incorporated. In the vicinity are large manufactories of explosives, brownstone quarries and in the forests there is considerable lumbering. There are nearly 2,000 employees in the industrial establishments. Washburn ships large quantities of stone, lumber and grain; and distributes to the lumber camps and the towns and hamlets of the vicinity general merchandise. There are several church buildings, the county courthouse, which cost $50,000, and several good business blocks. The educational institutions are the Walker High School, founded in 1889 (building cost $40,000), three graded schools, one large Roman Catholic parish school and a school library. There are two banks and two newspapers. The majority of the inhabitants are Scandinavians. Pop. 3,830.

WASHBURN COLLEGE, located at Topeka, Kan. It was founded in 1865 by the General Association of the Congregationalists of Kansas, but is non-sectarian in policy and government. It was first called Lincoln College and the name changed in honor of Ichabod Washburn of Worcester, Mass., who gave the college $25,000. The college is coeducational. The course of study was at first not above the academic grade, but was soon expanded to a full college course and other departments added until the college now includes four departments: (1) the College; (2) the School of Law, opened in 1903; (3) the School of Fine Arts; (4) the Summer School. The college confers the degrees of B.A., and B.S., for the completion of a four years' course and the degrees of M.A., and M.S., for graduate work. For the bachelor degrees the course in the first two years is partially prescribed and partially elective, for the last two years, entirely elective. The electives must include a major and a minor taken in courses not open to freshmen and totaling 28 hours. Candidates for the B.S., degree must elect the mathematic and science for their major and minor requirements. Biblical literature, Hebrew and pedagogical courses are included in the curriculum. The School of Law offers a three years' course and confers the degree of LL.B. The School of Fine Arts was organized as a separate school in 1902, music and art departments having been established some years before. This school includes the departments of music, drawing, painting and expression. The music department offers four years' collegiate courses in pianoforte, organ, violin and vocal culture, leading to the degree of bachelor of music; and a two-year normal course for public school teachers. The students maintain five literary societies, two for men and three for women, an oratorical association, Christian associations, and an athletic association. In addition to the intercollegiate sports in which the college participates, an annual college field-day has been inaugurated. The college occupies a campus of 160 acres just outside the city on elevated ground; the buildings include Rice Hall (originally Science Hall, the name having been changed in 1902), Whitin Hall, the observatory building (erected in 1903 for the departments of physics and astronomy), the MacVicar chapel, the Library, Hartford Cottage and Holbrook Hall (women's dormitories), Carnegie library and Thomas gymnasium. The library contains 26,000 volumes; in addition the school of law has a separate library. The Topeka Public, the Kansas State, the Kansas State Historical Society and the Academy of Science libraries are open to students. The enrolment in 1917–18 was 709 students, of whom two-thirds were in the college department.

WASHING OF FEET. See FEET WASHING.

WASHING MACHINE, a machine for washing clothes. A great number of machines have been contrived, the most general feature of them being that the clothes are agitated by artifical means in a vessel or trough containing the cleansing agents. One of the great advantages of the washing machine as compared with the hands is that the water can be used when boiling hot. In some, provision is made for retaining the steam which effectually bleaches the clothes, and they generally have also roller attachments for wringing and mangling. See LAUNDRY MACHINERY.

WASHINGTON, wŏsh'ĭng-tŏn, **Booker Taliaferro,** American negro educator: b. near Hale's Ford, Franklin County, Va., about 1858; d. 14 Nov. 1915. After the Civil War he went to Malden, W. Va., where he worked first in a salt-furnace and afterward in a coal-mine, obtained some rudiments of education in a night-school there, and finally after many difficulties, recounted in the autobiography 'Up from Slavery' (1901), got to the Hampton Normal and Agricultural Institute (Va.) (q.v.), where he studied in 1872–75. After a two-years' interval of teaching at Malden, he obtained further training at the Wayland Seminary (Washington D. C.), and in 1879 was

made an instructor at Hampton. He had charge of the work of the Indian pupils then being experimentally introduced into the institution and established the night-school as a regular and successful feature of the institute. In 1881 he was selected by Gen. S. C. Armstrong of Hampton on the application of citizens of Tuskegee, Ala., to start in that place in institution on the plan of Hampton. The State legislature granted an appropriation of $2,000 annually for the salaries of the teaching force, but the Tuskegee Normal and Industrial Institute (q.v.) then existed in name only, without land, buildings or credit. Washington, with himself as the only instructor, opened the school with an enrolment of 30 in an old church and a shanty. Later he purchased a plantation about a mile from Tuskegee, and removed the school thither to its present site. In 1918 the institution had 191 officers and instructors, 1,451 students and over 2,500 graduates. Its development was due chiefly to the activity of Washington in bringing the nature and merits of the work to public attention, and the originality and effectiveness of his methods. He has aimed to give the blacks a practical education along lines of trade and industry, leading to an ultimate position of economic independence in the South. If this were attained he asserted, political rights now denied would not long be withheld. He became well known as a forceful public speaker, his most noteworthy address probably being that given in 1895 at the opening of the Cotton States and International Exposition in Atlanta, Ga. He organized the National Negro Business League at Boston in 1900. Among his writings are 'The Future of the American Negro' (1899); 'Up from Slavery' (1901), the interesting autobiographical narrative referred to above; 'Character-Building' (1902), collected addresses to pupils of Tuskegee; and 'The Story of the Negro' (1909); 'The Man Farthest Down' (1912). Consult Thrasher, M. B., 'Tuskegee' (1900), to which Washington contributed an introduction; an article by W. D. Howells (in the *North American Review*, Vol. 173, pp. 280–288, 1901); his 'Life' by Stone and Scott (Garden City 1916); and Riley, D. F., 'The Life and Times of Booker T. Washington' (New York 1916).

WASHINGTON, Bushrod, American jurist: b. Westmoreland County, Va., 5 June 1762; d. Philadelphia, 26 Nov. 1829. He was nephew of George Washington. He was graduated in 1778 from the College of William and Mary; studied law with James Wilson (1742–98) at Philadelphia and practised in Westmoreland County with much success. From 1780 until the surrender at Yorktown, he served in Colonel Mercer's cavalry troops, in 1787 became a member of the Virginia house of delegates; and in 1788 of the Virginia convention for ratification of the Constitution of the United States. In December 1798 he was appointed an associate justice of the United States Supreme Court. He was the first president of the American Colonization Society (See COLONIZATION SOCIETY OF AMERICA, THE NATIONAL). Among his publications are 'Reports of Cases in the Court of Appeals of Virginia' (1798–99); 'Reports of Cases Determined in the Circuit Court of the United States for the 3d Circuit, 1803–27' (edited by R. Peters, 1826–29). Consult Binney, 'Life' (1858).

WASHINGTON, George, American soldier-statesman, and first President of the United States: b. in the family homestead at Bridges Creek, in Westmoreland County, Va., 22 Feb. 1732; d. Mount Vernon, 14 Dec. 1799. He was the fifth child of Augustine Washington, who belonged to the third generation of Washingtons who had lived in America. Augustine was a well-to-do planter who might have afforded every school advantage to his son had he not died before George was 12 years of age. The father's death left the son in his mother's care, with a farm on the Rappahannock as his sole inheritance. This precluded any hope of an education in England such as his elder brothers had enjoyed, and he, therefore, received the practical and elementary instruction afforded in colonial Virginia. He learned something in books but more about the forest life, and manly sports, and the habits of a Virginia gentleman. Formal schooling he quit altogether at the age of 16, and began surveying in the employment of Lord Fairfax, an Englishman who came to Virginia to look after his inherited lands, and whose companionship taught Washington some of the conduct and breeding of a man of the world. Though Washington was a mere boy and almost self-taught in surveying, yet he was a good woodsman, and he did his work so well on Lord Fairfax's forest lands that for three years he was kept busy at the profession, which in that day approached nearer to woodcraft than expert mathematics. Meanwhile he did not neglect to give considerable time to the study of military tactics and the manual of arms, for which a Virginian of his standing might have use. This life came to an end in 1751, when the failng health of his elder brother Lawrence caused him to seek recuperation in the Bahamas. Thither George went with him, only to bring him back to die. As executor of his brother's will, he assumed so many cares that his surveying profession had to be abandoned altogether.

Before Lawrence's death he had given George his place in the Virginia militia, and in 1752 Lieutenant-Governor Dinwiddie gave the popular young soldier a commission as major and adjutant-general in charge of one of the four military districts of the State. Hardly was he in charge of his new office when a movement of the French to insure their control of the region between the Mississippi and the Alleghanies made war between the French and English in America almost inevitable. From Canada the French had sent 1,500 men to Presque Isle on Lake Erie to erect a fort, intending thence to push through the forest to the Allegheny River and down it to the Ohio. There they would drive out the English, who were beginning to push into that region.

Governor Dinwiddie saw the danger and, after getting authorization from England, he selected Major Washington for a dangerous midwinter journey through the forest to the French fort to command them to depart and not to trespass upon England's claims. The hardy young surveyor made the terrible journey only to be given the hint that the French had come to stay. Upon his return, the Virginia assembly was persuaded to furnish funds for

a force to be sent against the invaders. Washington was made lieutenant-colonel, and under Colonel Fry set out to resist the French advance. Fry died on the march, and Washington bore the brunt of the enterprise. A rough and ready fort built by an advance party of backwoodsmen near the junction of the Ohio and the Allegheny was taken by the French, who thereupon built Fort Duquesne and awaited the Virginians. In that neighborhood, at Great Meadows, Washington camped. A skirmish took place in which a small body of French under Jumonville were defeated, and then the defenses, which Washington had built and called Fort Necessity, were attacked, 3 July 1754, by superior French forces. A wretched day of fighting in the rain was followed by a parley, at which Washington sensibly agreed to withdraw from a hopeless conflict. Upon his return to Virginia he was unfairly reduced in rank, and indignantly resigned his commission.

The war for the possession of America was now taken up by the home government. England sent the headstrong General Braddock to help the English colonists to drive out the French. Upon his arrival in Virginia he made the acquaintance of Washington and offered to make him a member of his staff — an offer which was eagerly accepted. Braddock did not realize the difficulties of forest warfare, and without heeding some of the wise counsel given him by Americans, he pushed toward Fort Duquesne with 2,000 regulars brought from England and some provincial recruits. Eight miles from the French fort, he was attacked by an unseen enemy, and the terrified regulars were held in solid ranks to be shot down until sheer fright made them break into retreat. Braddock was mortally wounded, and it was left to Washington to conduct the retreat. After he had led the shattered forces back to Virginia, he became for a time the chief stay of his province in guarding her frontiers against the savages, until, in 1758, he was sent with the British General Forbes again to attempt the capture of Fort Duquesne, and this time success crowned the effort. Then Quebec fell, and England's power in America was firmly established.

When England and her colonies quarreled, Washington took an early and decided part in asserting and defending the colonial rights, though with other American leaders he long looked and hoped for conciliation. To him the Stamp Act was "a direful attack on the liberties of the colonists." In 1769 he thought something must be done "to maintain the liberty which we have derived from our ancestors." He approved of awakening English attention to American rights "by starving their trade and manufactures," and as a member of the Virginia assembly he presented a non-importation agreement, and secured its passage. He was present and gave his support, in 1773, to the resolves instituting a committee of correspondence, and in 1774 he favored the proposed general congress at Philadelphia. On 1 Aug. 1774 the convention met which elected him, with six others, delegates to the first Continental Congress, where he was in the opinion of Patrick Henry "unquestionably the greatest man on the floor," as far as solid formation and sound judgment was concerned. When the second Continental Congress met, 10 May 1775, he was again a member, but he was not *long* to remain there.

After 10 long years of growing irritation between England and America the first blow had been struck. The enraged farmers had followed the intruding British from Concord and Lexington to the very defenses of Boston, and then with their numbers ever-increasing they settled down in a great half-circle around the town with the purpose of driving Gage, the British commander, into his ships. Everything was in confusion and men came and went much as they chose, kept to their task only by the efforts of a few natural leaders. When the men of New Hampshire and Rhode Island and Connecticut came, not even the fanatic zeal of the siege could banish the provincial jealousies. It was plain to all that there could be no great thing accomplished without a strong leader, one who would make men forget, for a time at least, the most prominent fact in colonial life — the jealous love that every man had for his own colony.

The Continental Congress was forced after a month of hesitation to assume the army before Boston as the "Continental Army." As a commander-*in*-chief they needed a man who could by his personal influence draw the southern and middle colonies into the struggle which New England had thus far made alone. In this critical moment John Adams saw the wisdom of binding the South to New England's fortunes by choosing a Virginian to lead her army. Local prejudice would have chosen John Hancock, who was bitterly chagrined that he missed the office. At Adams' suggestion the choice fell upon Col. George Washington, who every day since the session began had sat in Congress in his uniform.

The new commander-in-chief was a physical giant, over six feet, and of well-proportioned weight. His composed and dignified manner, and his majestic walk marked him an aristocrat and a masterful man. This character was heightened by a well-shaped, though not large head set on a superb neck. His blue-gray eyes, though penetrating, were heavy-browed and widely separated, suggesting a slow and sure mind rather than wit, and brilliant imagination. Passion and patience, nicely balanced, appeared in the regular, placid features, with the face muscles under perfect control. A resolutely closed mouth and a firm chin told of the perfect moral and physical courage. His clear, pale, and colorless skin never flushed in the greatest emotion, though his face then became flexible and expressive. Mentally, the directive faculties were the more marked. He had been but half-educated, with no culture except that coming of good companionship. From that he had learned rather the tastes of a country gentleman, courtesy, hospitality and a love of sport. The soundness of his judgment and the solidity of his information were the notable qualities. He had little legal learning and was too shy and diffident for effective speech. His eloquence was the eloquence of battle. It had the note of challenge, and the gesture of chivalry when it threw down the gage of mortal combat. "I will raise one thousand men," he said in 1775, "at my own expense, and march myself at their head for the relief of Boston." Of original statesmanship he had little, but he had "common sense lifted to the level of genius."

Believing in a course, he followed it, single-minded, just, firm and patient. No rash action or personal caprice was ever charged to him. He was able to bear great responsibility, and courageously to meet unpopularity and misrepresenation. There was no flaw in his devotion. He was "often anxious, but never despondent." "Defeat is only a reason for exertion," he wrote. "We shall do better next time." This spirit, and his gift for military administration, were the winning traits in the years to come.

On the day before the Continental army fought at Bunker Hill, 16 June 1775, Washington accepted the command in his modest way, refusing to accept any pay for his services, except his actual expenses. To his wife, the one person to whom he could lay bare his heart, he wrote: "I assure you in the most solemn manner that so far from seeking this appointment, I have used every endeavor in my power to avoid it . . . from a consciousness of its being a trust too great for my capacity." "A kind of destiny" had thrown him into this service, and he could not refuse.

Upon his arrival at Boston, 2 July, Washington found his army an armed mob. They had done creditable things, but in a blundering, unmilitary way. Rude lines of fortifications extended around Boston, but they were executed with crude tools and without competent engineers. A few officers were looking after the commissary department, but there was no head. No able officer looked after the recruiting and mustering service, or the barracks or hospital, and there was only a haphazard method of paying the soldiers. There was no uniform, and the very differences in costume augmented the colonial jealousies and self-consciousness. All that distinguishes a well-drilled and equipped army from a mob was wanting; yet here was the weapon with which Washington was expected to defeat the armies of the most powerful nation of the world. Only by the exercise of all his gifts as an administrator did he get even the semblance of an army. His own great care for details, his method and punctuality had their effect upon others, and, though there was malingering, desertion and petty mutinies, the enemy never knew that the army before Boston was often on the point of dissolution. When, in December, the terms of enlistment ran out, Washington even succeeded, as he said, in disbanding one army and raising another within cannon shot of the enemy. Then early in March 1776 he made an adroit move, seized Dorchester Heights, and left the British nothing to do but evacuate Boston in the utmost haste.

The American leader had scored his first triumph, and, that assured, he hastened with his army to New York, where, it was shrewdly judged, the British would strike next. Congress urged him to hold the city at all hazards, and contrary to his better sense, he attempted the impossible. Without the control of the sea, New York, on its narrow strip of land thrust far down between two navigable waters, was a deadly trap. A military genius would have refused the risk, but Washington ventured it, half believing for a time that he might succeed. He placed his army in a position where every probability pointed to defeat, followed by almost certain capture or destruction. Had Howe not taken such tender care of his enemy's safety, all might have ended there. Washington was able to withdraw from Brooklyn, 30 Aug. 1776, after the defeat on Long Island, and then to evacuate New York and get behind the Haarlem, because, as an English critic said, Howe calculated with the greatest accuracy the exact time necessary to allow his enemy to escape. The unbounded confidence of Washington's countrymen had proved too much on this occasion for even his steady judgment, and in response to their enthusiasm he had tried to hold a position and defend a place for which his resources were inadequate. He had become for the moment a source of danger to the Americans because they did not understand his real greatness.

Washington realized keenly his own lack of military experience on a large scale — he had no heaven-born genius, and he knew it. The skill that he finally attained was that which a strong-brained, sensible man would get in any vocation which he plied industriously, and to which he gave his heart. Washington learned as he fought, and his early errors with the consequent disaster grew steadily less, until, as a master of his profession, he issued from the war without a peer and almost beyond the reach of envy. Yet not even his ultimate military greatness explains his real service to his countrymen. It was the confidence that Washington inspired as a man, rather than his great genius as a soldier, which made him the only man in America who could carry the Revolution to a successful issue.

After losing New York Washington fought step by step, as he retreated, repulsing the British at Haarlem Heights and holding his own at White Plains, 28 Oct. 1776, but the meddling of Congress cost him some 3,000 men captured in Fort Washington, and then there was nothing for him but a retreat from the Hudson through New Jersey. This was not the only time that the democratic faction in Congress forced their military plans upon their commander-in-chief. He was much hampered at first by Congressional interference in his military plans, but he soon won the limitless faith of these democratic enthusiasts, conquering all their fear of military despotism and gaining in the disposal of his own army the supremacy of a Frederick or a Gustavus Adolphus.

As the American army fell back mile after mile the character of the leader was tested to its utmost. His generals grew insubordinate, his men deserted by whole companies, throughout the Jerseys thousands took oath of allegiance to George III, and everywhere there were murmurs of discontent with this sort of a campaign. Then it was seen that Washington's courage was not mere disregard of danger, but the sort that long endures uncertainty and never shrinks responsibility, bearing in silence temporary unpopularity or exasperating misrepresentation.

When the army at last crossed the Delaware the roll-call would muster but 3,000 men. Straining his powers to the furthest bounds, Washington kept this force together, and added as many more. Concerning some of his extraordinary measures, Washington wrote Congress: "A character to lose, an estate to forfeit, the inestimable blessing of liberty at stake, and a life devoted must be my excuse." Before the holidays he was ready to strike a blow

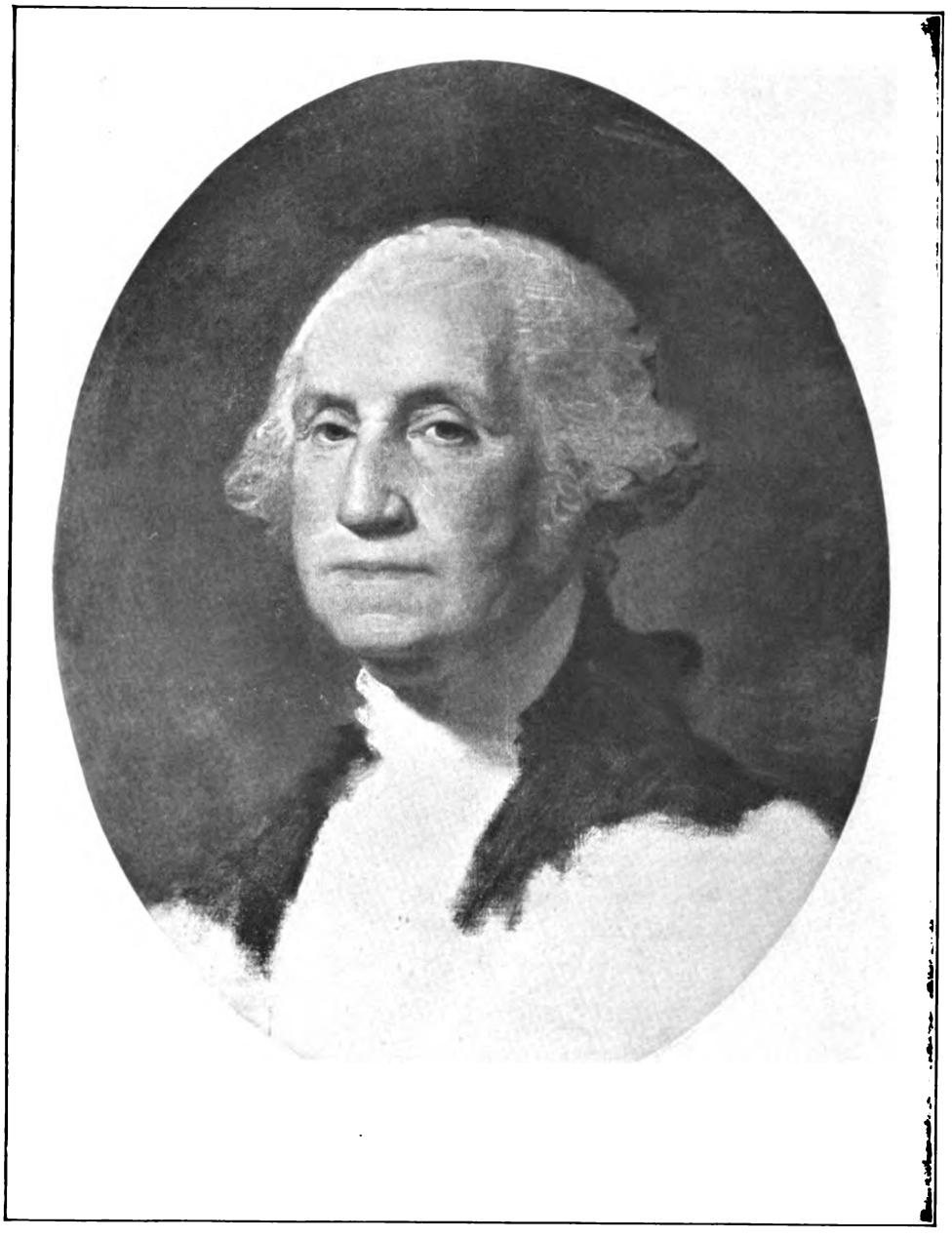
for liberty, and to sustain his character. Crossing the Delaware, 25 Dec. 1776, in spite of pitchy darkness and grinding ice, he marched through a sleeting storm nine miles to Trenton. The Hessians there were surprised and driven to surrender. Some 900 prisoners were taken to the other side of the river, and then Washington crossed again to win another victory at Princeton. The whole situation was changed. The wretched retreat was forgotten or regarded as only the prelude to the startling and brilliant victories. In England, Walpole declared that Washington was both a Fabius and a Camillus. His whole campaign got a new color because of its issue. In the Russian court, in Frederick's cabinet, and in the aristocratic circles of Paris, Madrid and Vienna the campaign was praised as if the end had been in Washington's view from the first. The victories made Washington's military reputation rest on something tangible, to which men might point. Mere faith such as the Americans had shown heretofore had little effect on foreign critics. The European soldiers grew more interested, and their favorable opinion had vast influence in winning foreign aid. Washington had been so consistently patient and brave in adversity, so silent under unjust criticism, never talking down his mistakes, or glossing his errors, that the hour of victory brought its ten-fold reward in sympathy and confidence. He had quietly assumed so much obloquy that any stint of his praise seemed unjust and ungenerous. The victories renewed American confidence in their leader, and from that time on whatever there was of unity for political or military purposes among the 13 States came of the common faith in Washington.

Congress now put its whole trust in him — until a temporary reverse put him again in the shadow of its distrust. It provided for long enlistments to take the place of the evanescent three months' levies that had ruined Washington's army heretofore, just as he had it drilled. He was made a veritable dictator as to all that might affect the success of the army, its discipline and its supplies. It was well that the commander-in-chief had made this brilliant stroke, which appealed to all those who saw only the surface of the Revolution. For 18 months thereafter nothing but reverse and misfortune and terrible trial fell to the leader's lot. While Gates was gathering unearned laurels at Saratoga, and the American cause was vastly advanced by Burgoyne's defeat and the consequent French alliance — while others were getting glory and significant victories, Washington was manœuvring with Howe, always refusing battle, or, as at Brandywine Creek, 11 Sept. 1777, and Germantown, 4 Oct. 1777, meeting defeat. To the superficial observer there was only failure for Washington and success for his rivals. There seemed no great work in merely keeping an army together, delaying Howe and keeping him from going north to Burgoyne's rescue. When, at last, the British settled down cosily in the "rebel capital" — when Philadelphia had taken Howe, as Franklin so cleverly expressed it — Washington encamped at Valley Forge, 19 Dec. 1777, his popularity waning at the very moment when he began to render his greatest service to his country. There, in the most trying hour, he continued to do what had been his greatest task from the first. In spite of jealous States and a wrangling Congress, and while deprived of all that source of power which a strong government gives to a commander, Washington kept together a starved and suffering army by his personal firmness, patience and judicious handling of men.

While the burden of his trial was greatest there grew up in Congress an ugly scheme to put Gates in Washington's place. From the first there had been intrigue among the officers. "I am wearied to death," John Adams wrote, after a visit to the army, "with the wrangles between military officers high and low. They quarrel like cats and dogs. They worry one another like mastiffs, scrambling for rank and pay like apes for nuts." Amid this Washington had lived disturbed, but not concerned for himself. Now Congress was implicated in the plotting. Some were impatient with the Fabian policy, and, like Adams, wanted "a short and violent war." A conceited or vain man would have resigned and let the whole cause go to perdition as a vindication of himself, but Washington was nobler than that. Throughout the Revolution he kept the same spirit that animated him in the earlier years of border fighting. Then he had declared: "I could offer myself a willing sacrifice to the butchering enemy, provided that would contribute to the people's ease." He could "die by inches to save a people." During the Revolution he risked reputation, sacrificed popularity, suffered in mind and heart all that he had been willing to suffer in body to "save a people." Now he silently watched the plot ripen, and at the right moment exposed it with a royal contempt that quite crushed the plotters.

When the winter was gone there came the news of the French alliance. A fleet from France was menacing the British army in Philadelphia, and orders came for the evacuation of the city. They began a march toward New York across New Jersey. At Monmouth, 28 June 1778, the American army fell upon them, and, but for the cowardly or traitorous conduct of General Lee, nothing but the fragments of the English army would have reached its destination. In that moment men saw what a tempestuous nature Washington habitually held in check. He stopped the retreat that Lee had unaccountably ordered, and in ungoverned rage cursed him for a coward. The troops were rallied, and they successfully engaged the enemy, but the moment for victory had been lost. The British reached New York in safety and Washington took a post on the Hudson.

Now came the supreme test that proved the American leader's unrivaled fitness for the work that he had to do. For three years, while Congress was helpless, unable to tax or get aid from the States, while it paid the soldiers in paper, so valueless that the pay of a colonel would not purchase oats for his horse, while nothing but a forced levy would secure food for the army, when a hundred men a month went over to the enemy in sheer desperation with suffering for food and clothing, while the great country that had so much at stake seemed absolutely indifferent — in the midst of blank despair Washington kept his heart and his purpose. Again and again he was disappointed by the failure of the promised aid from France — the naval aid that would prevent the British escape by sea if they were worsted on land.



GEORGE WASHINGTON

From the Painting by Stuart

At last, however, the moment came when De Grasse with a French fleet held a temporary control of the sea, and Lafayette had pushed Cornwallis out on the peninsula at Yorktown. A few days' hesitation would have lost the opportunity, but the man who had waited three years knew the moment for action when he saw it. Making a feint that deceived the enemy at New York, he got well on the way before his aim was guessed. For 400 miles he urged his eager army, and brought 6,000 men to Lafayette's aid at just the hour to render Cornwallis' escape impossible. The siege that then began could have but one end as long as De Grasse controlled the sea. The British surrendered, 19 Oct. 1781, and the war was ended.

As men looked back over the years of strife, they saw clearly that the greatest factor in the final success of the Revolution was the personal leadership of Washington. If we seek an explanation, it was not his great mind, for Franklin's was greater; not his force, energy, or ingenuity, for Benedict Arnold surpassed him in these qualities; not his military experience, for Charles Lee's was far more extensive; but it was the strength of character which day by day won the love of his soldiers and the perfect confidence of his countrymen. The absence of a mean ambition, the one desire of serving well his country and his fellow men, the faithfulness that could not be driven from its task through jealousy or resentment — these were the traits that gave him an unique and solitary place among the world's heroes.

Washington's service to his country was not to end with Yorktown. As he had been "first in war," because he was most fitted, so his unique character and pre-eminent place in American hearts fated him to become "first in peace." His last success had still more firmly fixed his power among the people. Their thoughts and imaginations were filled with him. But they had not even yet seen the sublimity of his character. With a discontented and insubordinate army still in arms and with no real government in existence, Washington was the only source of authority and law that had anything more than a local influence. The weak Union might have at once lost all cohesion, and America might have degenerated into a number of petty, feeble and hostile States. Worse than that, the hopes for an American republic might have been indefinitely delayed, for, in the despair which settled upon many, there seemed but one escape from the political storm that threatened — they would make Washington king. In the army this plan was gravely considered, but when broached to Washington, he expressed himself as pained that such ideas existed in the army. "I am much at a loss to conceive what part of my conduct could have given encouragement to an address which to me seems big with the greatest mischief that can befall my country." To nobody could such a thought be more disagreeable, he declared earnestly. "Let me conjure you, if you have any regard for your country, concern for yourself or posterity, or respect for me, to banish these thoughts from your mind."

When the country seemed indifferent to the deserts of the army, when there was talk of disbanding it without provision for the future or even pay for what it had done, and when as a natural result there was mutiny and threat that the army would take government into its own hands — then it was Washington who tirelessly urged upon Congress and upon the States the justice of the soldiers' claims. Though he longed to go back to his home and to have his work done, yet he waited through months of weariness until the British really left the country, and until the proper laws at least had been made to insure the soldiers' rights. Then at last he stood among his officers at Fraunce's Tavern, bidding them to take him by the hand, while he gave them each and all the warm-hearted farewell that so fittingly ended their long years of trial and companionship.

For a brief time Washington now became "a private citizen on the banks of the Potomac . . . free from the bustle of a camp and the busy scenes of public life," planning as he said to "move gently down the stream of time until I sleep with my fathers." He did not see in this happy hour that his past services had but devoted him to further duties, and that he had become "the focus of political intelligence for the New World." Even before resigning his leadership he had urged the States to put faction and jealousy away and make "an indissoluble union under one federal head." As the affairs of the confederation became more and more deranged, and America, "like a young heir," as Washington wrote, wantoned and ran riot until its reputation was brought to the brink of ruin, their great leader warned them that it was in the choice of the States and depended upon their conduct, whether they would be respectable and prosperous, or contemptible and miserable as a nation.

The politically starved Congress grew daily weaker. It could not even persuade the States to carry out the terms of the treaty of peace or pay their debts to foreign countries. Congress was despised at home, and America was disgraced abroad. The world looked on to see the confederation go to pieces. Within the individual States the mob seemed to have gained control and the law-giving bodies abandoned themselves to paper money and other economic vagaries. There was quarreling over State boundaries and commercial restrictions, one State against another, until thoughtful men like Washington urged that, if they were not a united people, they should no longer act the farce of pretending it. At last, however, his own endeavors united with others brought about a convention of the States, and that led to another which met at last in May of 1787, at Philadelphia, destined, if not purposed, to give America a new and stronger form of government. To that convention Washington reluctantly came. He thought himself a soldier but no statesman. When at last he was persuaded that the chief hope for success must come from his approval, and that his mere presence would lend dignity and power to the convention, he yielded. As the delegates slowly assembled, he grew eager for the success of the work, and would listen to no half-way measures. "Let us raise a standard to which the wise and the honest can repair," he said to those who talked of a weak plan. When the work began he was chosen president of the convention, and, though he was no parliamentarian, his prominent place lent gravity and steadiness to the business.

After the Constitution was completed, and when it was before the country for approval, Washington had never been seen so eager for anything as for the adoption of the new scheme of government. It was only by active letter-writing that he used his influence, however, for the work of the politicians was out of character for him. The final success was very grateful to him, but, when the new government was being set up, and the whole country turned to him as their choice for President, he held back, diffident and reluctant. He yielded at last because, as Hamilton represented to him, "In a matter so essential to the well-being of society as the prosperity of a newly instituted government, a citizen of so much consequence as yourself to its success has no option but to lend his services."

His was a noble figure to stand in the forefront of a nation's history. His simple manner well graced a republic, and yet there was a gravity and a lofty courtesy that lent dignity to democratic forms. His own self-mastery was a living lesson to democracy with its ill-repute for turbulence. No more fitting ideal of manhood could have been chosen for a new republic. It is, indeed, creditable to the men of that day that they were won by a character so unpretentious.

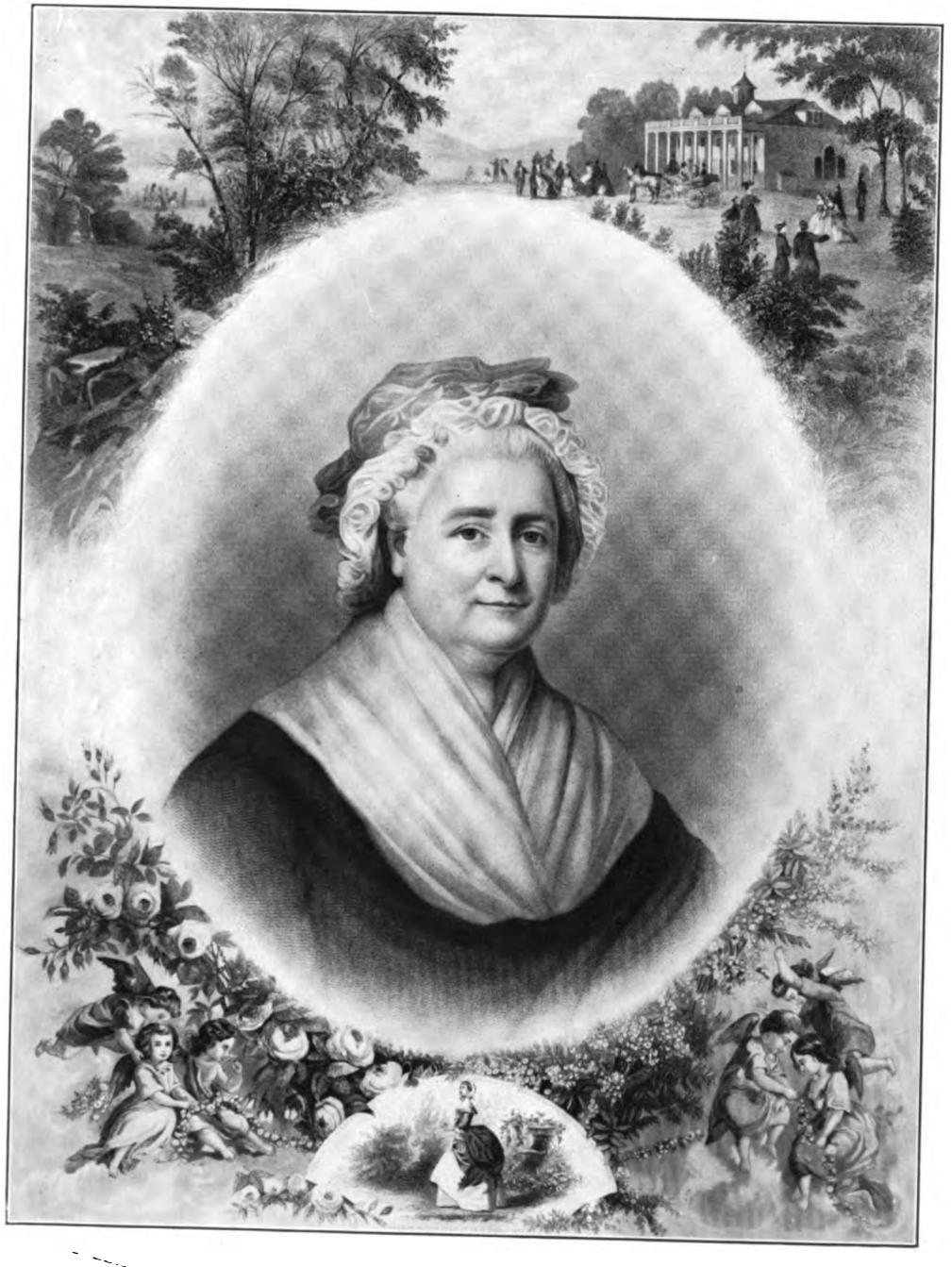
The political leadership was very unattractive to Washington. When the formality of election was over, he went to the seat of government with "feelings not unlike those of a culprit who is going to the place of execution." He bade adieu to private life and to domestic felicity, going to his new duties with resolution, but anticipating no joy in them. On his way the demonstrations of the people only filled him with forebodings. "The decorations of the ships, the roar of the cannon, and the loud acclamations of the people which rent the skies as I walked along the streets, filled my mind with sensations as painful as they are pleasant." After he had sworn, 30 April 1789, in the open balcony of the Federal Hall, that he would faithfully execute the office of President of the United States, he read his address in the Senate Chamber. "The magnitude and difficulty of the trust," he protested once more, "could not but overwhelm with despondence one who, inheriting inferior endowments from nature, and unpractised in the duties of civil administration, ought to be peculiarly conscious of his own deficiencies."

He realized keenly from the first that he walked "on untrodden ground." Scarcely any part of his conduct might not thereafter be drawn into precedent. There must not be a government only, but a body of public opinion that would uphold it. Governmental action must be mixed of firmness, prudence and conciliation, said Washington, if it would win liking and loyalty as well as respect. He resolved to give it every proper form of dignity, ceremony and prestige that would appeal to the imagination of the people. Men must see that it was a real government, supreme in the land. To this end he adopted forms that some thought stiff, some unrepublican, but which all were soon taught to respect. "If there are rules of proceeding," he wisely concluded, "which have originated from the wisdom of statesmen, and are sanctioned by the common assent of nations, it would not be prudent for a young State to dispense with them altogether."

It was not by this conservatism alone that he gave strength to the new government, but by that unerring judgment which led him to choose men like Hamilton, Knox, Jefferson and Randolph, and then to take for his guide Hamilton, the greatest of these for the present needs of the government. Natural leader as Washington was, he recognized the gifts and talents of others, and gave to each the task for which he was fitted. Hamilton's genius in affairs had not been in just the lines along which he was now to act, but his bold and original mind Washington saw to be a fit instrument to set the new government on a strong foundation. Hamilton quickly demonstrated the wisdom of the President's choice. He funded the public debt and established confidence in the nation's honesty. He prevailed upon Congress to assume the State debts and thus transferred the interest of creditors to the central government. A bank of the United States was created at his call, the "implied powers" of the Constitution being thus brought to the support of a strong government, and the commercial classes won by this attention to their interests. He was enabled to do these things successfully because he had the strong will of Washington with him. The fiscal measures had been made the President's own, because he was convinced that they were right, not merely that they were expedient. The end that was sought was the purpose that Washington held from the first, a strong and righteous government.

Hardly had things been set aright in the new nation's household than there came disturbing forces from abroad. The French people had gone upon a wild quest for liberty that threatened to turn the world upside down. The madness spread even to America — or rather seemed to leap by a strong attraction straight to America's democratic shores. France was soon fighting the conservative world, and what was more fitting than that liberal America should come to her aid? A French agent hastened to America to ask the people that very question. Washington determined that America, herself but "in a convalescent state," should not be drawn into the European struggle. She was too provincial at the best, too interested in European opinion and politics, and too oblivious of her own nationality. "I want an American character," the wise President declared, "that the powers of Europe may be convinced we act for ourselves, and not for others." He would avoid their disputes and their politics, and he purposed "if they will harass one another, to avail ourselves of the neutral conduct we have adopted." Washington, with a few others, stood almost alone in the advocacy of statesmanship rather than sentiment. In a few months, however, the public eyes were able to see more clearly, and the administration got the support that it deserved. The demands of the French revolutionary government were refused, and the President issued a proclamation of neutrality.

Meanwhile the country had learned that the new central government proposed to enforce its laws even within State boundaries. The rebellion in the back counties of Pennsylvania was quelled by the strong action of the central power. There could be no return to the time



MARTHA WASHINGTON

when there was no power but that of an individual State. The national government was expected thereafter to make itself felt directly upon the individual, and men began to look to it therefore in awe and reverence.

A second time Washington consented to hold the reins of power, and again, as in the Revolution, he felt the bitterness of unpopularity. All the honor that he had gained could not protect him from the hasty wrath of a people dissatisfied with his policy toward England. Because he strove for peace he was roundly abused in terms scarcely suited "to a Nero, a notorious defaulter, or even a common pickpocket." It saddened but did not change him. He was only the more unwilling to serve another term, and, when his eight years of civil service ended, he said farewell to the people he had served through a generation. He gave them the simple advice that they most needed. Tears coursed down his cheeks as he turned for the last time from the throng that had listened to him in love and sorrow. Three years he lingered in retirement at Mount Vernon, and then died, as he had wished to live, "amid the mild concerns of ordinary life."

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Head of Department of History, University of Michigan.

WASHINGTON, Henry Stephens, American geologist: b. Newark, N. J., 15 Jan. 1867. He was graduated at Yale University in 1886, and took his Ph.D. at the University of Leipzig in 1893, studying also at the American School for Classical Studies at Athens, Greece. He has conducted an extended series of geological investigations in Greece, Asia Minor, Italy, Spain, Brazil and in the United States, and is a consulting mining geologist of high reputation. Author of 'Chemical Analyses of Igneous Rocks' (1903); 'Manual of the Chemical Analysis of Rocks' (1904; 2d ed., 1910); 'The Roman Cogmatic Region' (1907), etc.

WASHINGTON, Martha, wife of George Washington, first President of the United States: b. New Kent County, Va., May 1732; d. Mount Vernon, Va., 22 May 1802. She was the daughter of Col. John Dandridge, and was educated by tutors at home. The daughter of one of the first families of Virginia, possessed of both beauty and charm, a skilful performer on the spinnet, she became a famous belle, and was a frequent guest at the British governor's residence at Williamsburg, Va. In June 1749 she was married to Daniel Parke Custis, a wealthy Virginia planter. The marriage was a happy one and they lived at the "White House" on Custis's plantation on the Pamunkey River. Four children were born to them, of whom two died in infancy. Custis himself died in 1757, leaving his widow one of the wealthiest women in Virginia and with no restrictions upon her use of the property, a confidence which she proved amply justified. In May 1758 the Widow Custis became engaged to Colonel Washington and she was married to him in January 1759, the wedding being one of the most brilliant ever solemnized in Virginia. With Mrs. Washington's two children, Martha Parke Custis and John Parke Custis, they settled at Mount Vernon, the estate left to Washington by his elder brother Lawrence. The marriage was without issue, but was one of ideal happiness. Washington had resigned from the army, and except for winter sojourns in Williamsburg, where he was a delegate to the House of Burgesses, their life was the pleasant and busy one of the Virginia planters. Mrs. Washington's daughter, Martha, died in 1774 at the age of 16, and Washington was afterward absent in attendance at the Continental Congress. The separation was continued by his appointment as commander-in-chief of the Continental Army, but throughout the Revolutionary War, Mrs. Washington spent the winters at camp with the General, including the one of terrible privation at Valley Forge. During the campaigns she remained at Mount Vernon, superintending the plantation, and througout the Revolution she adopted the simplest manner of living and dressed in fabrics spun and woven at Mount Vernon. In November 1781 her only remaining child, John Parke Custis, died, leaving four children, of whom Washington adopted the two youngest, Eleanor Parke Custis and George Washington Parke Custis, as his own. After Washington's inauguration as President of the United States, at New York 30 April 1789, Mrs. Washington left Mount Vernon with her two grandchildren and traveled in state to New York. Bred to high social position, with every advantage of wealth and association, she presided over the Executive Mansion in New York and in Philadelphia with great grace and dignity, an incomparable "First Lady" and often called "Lady Washington." However, notwithstanding her great social gifts, the quiet of Mount Vernon was to her, as to her husband, the life most desired. There, after Washington's retirement from the Presidency, she continued to offer unlimited hospitality to the many visitors attracted by her distinguished husband. She never recovered from his death in 1799 and was deeply depressed until just prior to her own death two and a half years later. Her remains were placed at rest with those of Washington in the vault at Mount Vernon. Consult Conklin, M. C., 'Memoirs of the Lives of the Mother and Wife of Washington' (1851); Lossing, B. J., 'Mary and Martha'

(1887); Holloway, L. C., 'Ladies of the White House' (1886).

WASHINGTON, Mary, American woman, mother of George Washington: b. Lancaster County, Va., 1706; d. near Fredericksburg, Va., 25 Aug. 1789. She was the youngest daughter of Joseph Ball, and was educated chiefly by parish ministers. No authentic portrait of her exists, but she was beautiful and popular socially, and developed into a woman of remarkable force of character. She was married to Augustine Washington, 6 March 1730, Washington's first wife having died in 1728. They settled in Westmoreland County, where their first child, George, was born 22 Feb. 1732. Later they removed to another farm owned by Washington on the Rappahannock River, near Fredericksburg. Three other children were born of the marriage, John Augustine, Charles and Mildred. Mrs. Washington was widowed 12 April 1743, and became the sole guardian of her children. She managed her business affairs with marked success and reared her children in simple piety and under strict discipline, stamping her high principles indelibly upon them. She continued her customary habit of life after her son George rose to the heights of fame, personally managed her farm, and rarely appeared at public functions. She attended, however, with General Washington, the ball at Fredericksburg, given in honor of Cornwallis's surrender. Washington rode from her house to his inauguration as President, a few months before her death. Consult Conkling, M. C., 'Memoirs of the Mother and Wife of Washington' (1851); Lossing, B. J., 'Mary and Martha' (1887).

WASHINGTON, a western State of the United States, popularly known as the "Evergreen State," admitted to the Union, 22 Feb. 1889, is bounded on the north by the Strait of Juan de Fuca and British Columbia, on the east by Idaho, on the south by Oregon, and on the west by the Pacific Ocean. It lies between 45° 32′ and 49° N., lat. and 116° 57′ and 124° 48′ W. long. Capital, Olympia. Area, 69,127 square miles (land 66,836, water, 2,291).

Topography.— Washington is divided into two distinct sections by the continuous range of the Cascade Mountains, extending clear across the State from north to south. These sections are known as eastern and western Washington. The eastern section contains about three-fifths of the land area of the State and the western section about two-fifths. In its physical features the State is characterized by a great diversity of topography, ranging from low plains, a few feet above the sea-level, to snow-covered mountains, several of which exceed 10,000 feet in height, together with broad, rolling prairies, elevated plateaus, deep cañons and fertile valleys. This great diversity of topography presents ever-changing scenery and gives rise to a great variety of climate, rainfall, vegetation and occupations of the people.

Topographically, the State may be divided roughly into seven sections: First: The peninsula lying between Puget Sound and the Pacific Ocean. The greater part of this peninsula is occupied by the Olympic Mountains, which form a segment of the general coast range. The highest of these mountains reach elevations of from 7,000 to 8,000 feet. The whole section, with the exception of a strip a few miles in width along the coast, presents a very rugged surface, broken into high peaks, steep slopes, deep cañons and sharp serrated divides, which are almost inaccessible in many places, and as a consequence, these mountains form the least known section of the United States. The highest peaks of the Olympics are Mount Olympus, 8,131 feet; Fitzhenry, 8,098 feet, and Constance, 7,777 feet. Second: The Puget Sound Basin, a wide valley lying between the Olympic Mountains on the west and the Cascade Mountains on the east, extending in a north and south direction from the British Columbia line nearly to the southern part of the State. This basin consists largely of rolling land with many quite extensive level tracts. The soil consists principally of glacial deposits covered in the lower portions by alluvium. Third: The Cascade Mountains, which form the most prominent feature of the topography of the State. The general height of these mountains is about 8,000 feet above the sea-level with a number of peaks rising much higher, the highest being Mount Rainier, 14,408 feet; Adams, 12,307 feet; Baker, 10,730 feet; Saint Helens, 9,697 feet, and Stuart, 9,470 feet. Fourth: The Okanogan Highlands, extending eastward from the Cascade Mountains to Idaho and lying north of the Columbia and Spokane rivers. This section is characterized by a beautiful rolling surface, with long, gentle slopes reaching down from the watersheds to the wide stream basins. The divides, although attaining heights of 5,000 feet and more, are generally rounding and not sharp or abrupt. Fifth: The Columbia Plain, which includes nearly all that part of Washington lying south of the Okanogan Highlands and east of the Cascade Mountains. From the Columbia at a height of 500 or 600 feet above the sea, the plain rises gradually to the westward and eastward, reaching a general elevation of about 2,000 feet in the higher parts, with some hills and ridges rising from 1,000 to 2,000 feet above the surrounding plain. Much of this plain is in the form of an elevated plateau with a rolling surface. Several sharp ridges of a mountainous character run down from the Cascade Mountains in an easterly direction toward the Columbia River. Sixth: The Blue Mountain Range on the border line of Washington and Oregon represents a local mountainous section in the Columbia Plain. These mountains are located in the extreme southeastern portion of the State, the highest points rising 7,000 feet above the sea and about 5,000 feet above the surrounding plain. Seventh: The lower Columbia and Pacific Coast section includes that part of the State lying west of the Cascade Mountains and south of Puget Sound and the Olympic Mountains. This section consists largely of ranges of low mountains or hills, with broad valleys intervening, nearly all of which are covered with a dense growth of forest. In this section there are also a few rich prairies of limited extent.

Rivers, Lakes and Harbors.— The principal river of Washington is the Columbia, which enters the State from British Columbia, at about 117° 30′ W. long., from which point it pursues a southerly course for about 110 miles, flowing thence westerly for about 100 miles, thence south and southeasterly for 225 miles where it unites with its greatest tributary, the Snake River; from this point it pursues a westerly

WASHINGTON.

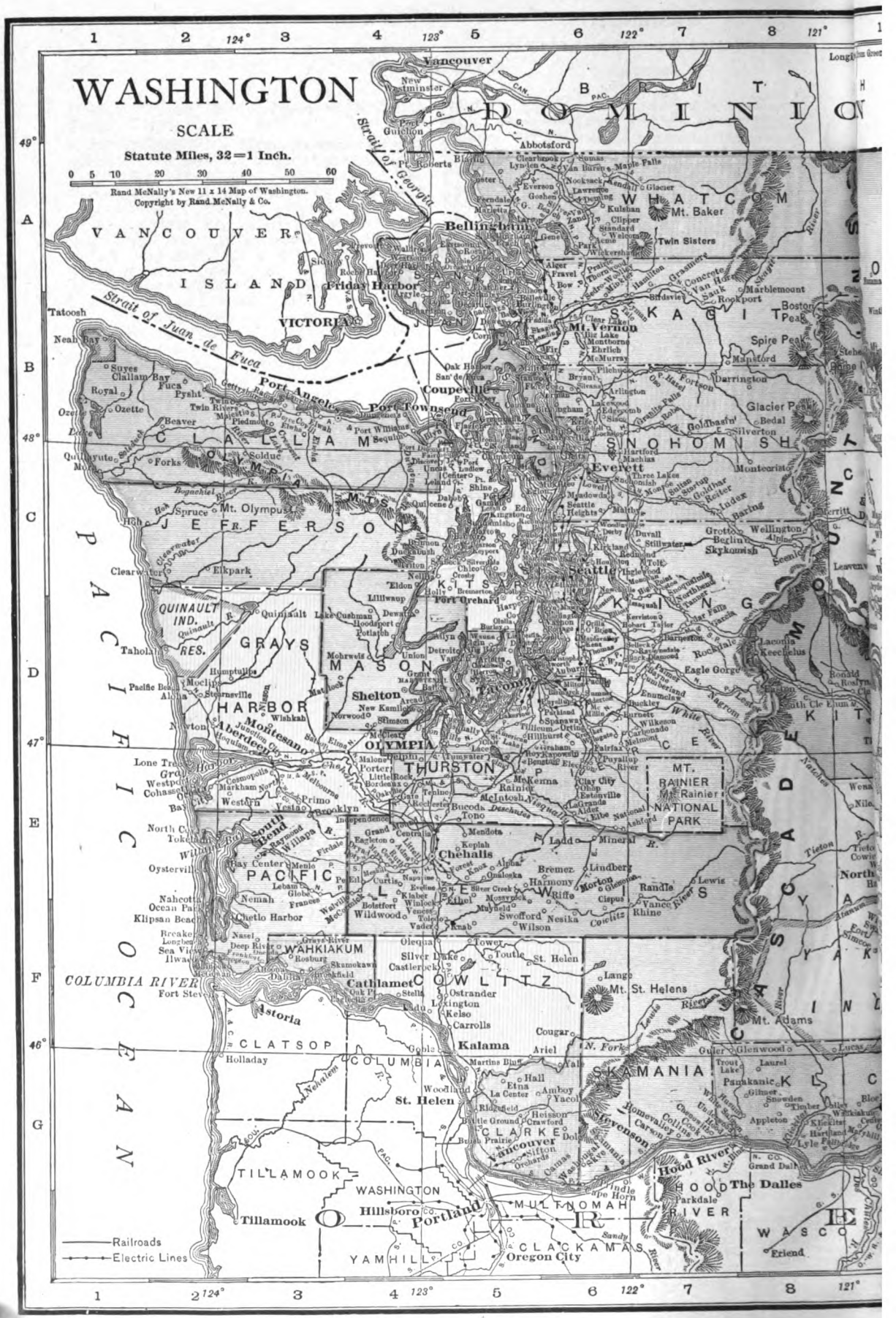
Estimated population, 1,534,221

COUNTIES

Pop.			Pop.		
10,920	Adams	E 14	32,127	Lewis	E 5
5,831	Asotin	F 17	17,539	Lincoln	C 13
7,937	Benton	F 12	5,156	Mason	D 4
15,104	Chelan	C 9	12,887	Okanogan	A 11
6,755	Clallam	B 3	12,532	Pacific	E 3
26,115	Clarke	G 5	....	Pend Oreille	A 16
7,042	Columbia	F 15		(Pop.incl.inStevensCo.)	
12,561	Cowlitz	F 5	120,812	Pierce	E 6
9,227	Douglas	C 11	3,603	San Juan	A 5
4,800	Ferry	B 13	29,241	Skagit	B 7
5,153	Franklin	E 13	2,887	Skamania	G 7
4,199	Garfield	F 15	59,209	Snohomish	B 7
8,698	Grant	D 11	139,404	Spokane	C 16
35,590	Grays Harbor	D 3	25,297	Stevens	B 15
4,704	Island	B 5	17,581	Thurston	E 5
8,337	Jefferson	C 3	3,285	Wahklakum	F 3
284,638	King	D 7	31,931	Walla Walla	F 14
17,647	Kitsap	C 5	49,511	Whatcom	A 7
18,561	Kittitas	D 9	33 280	Whitman	E 15
10,180	Klickitat	G 9	41,709	Yakima	F 9

Incorporated Cities, Towns, Villages, Etc.

20,334	Aberdeen	D 2	1,552	Monroe	B 7
276	Albion	E 16	2,488	Montesano	D 3
368	Almira	C 13	2,381	Mt. Vernon	B 6
4,168	Anacortes	A 5	299	North Bend	C 7
1,476	Arlington	B 6	1,199	Northport	A 15
820	Asotin	F 16	476	Northport	B 16
957	Auburn	D 6	20,951	North Yakima	E 10
32,985	Bellingham	A 6	882	Oakesdale	D 16
2,289	Blaine	A 5	465	Oakville	E 4
599	Bothell	C 6	127	Ocosta	E 2
2,993	Bremerton	C 5	885	Odessa	D 13
296	Brewster	B 11	611	Okanogan	B 11
431	Bridgeport	C 11	6,996	Olympia	D 4
1,272	Buckley	D 6	495	Oroville	A 12
1,302	Burlington	B 6	799	Orting	E 6
1,125	Camas	G 6	413	Pacific	D 6
625	Cashmere	C 9	1,549	Palouse	E 16
998	Castle Rock	F 5	2,083	Pasco	F 12
352	Cathlamet	F 3	176	Pataha City	F 15
7,311	Centralia	E 5	838	Pe Ell	E 4
1,062	Charleston	C 5	1,605	Pomeroy	E 16
4,507	Chehalis	E 5	2,286	Port Angeles	B 3
682	Chelan	C 10	682	Port Orchard	D 5
1,207	Cheney	D 15	4,181	Port Townsend	B 5
823	Chewelah	B 15	364	Poulsbo	C 5
1,257	Clarkston	F 16	502	Prescott	F 14
2,749	Cle Elum	D 9	1,298	Prosser	F 11
2,783	Colfax	E 16	2,602	Pullman	E 16
393	Colton	E 16	4,554	Puyallup	D 6
1,533	Colville	R 15	264	Quincy	D 11
357	Conconully	B 10	2,450	Raymond	F 3
945	Concrete	B 6	527	Rearden	C 15
1,132	Cosmopolis	E 3	2,740	Renton	D 6
276	Coulee City	C 12	999	Republic	A 13
310	Coupeville	B 5	1,859	Ritzville	D 3
308	Creston	C 14	663	Rockford	D 16
153	Cunningham	E 12	767	Rosalia	D 16
1,229	Davenport	C 4	3,126	Roslyn	D 9
2,389	Dayton	F 15	315	Roy	E 5
875	Deer Park	C 16	780	Ruston	D 5
754	Eatonville	E 6	348,639	Seattle	C 6
1,114	Edmonds	C 6	2,129	Sedro Woolley	A 6
330	Elberton	E 16	1,163	Shelton	D 4
4,209	Ellensburg	D 10	238	Skykomish	C 8
1,532	Elma	D 4	3,244	Snohomish	C 6
474	Endicott	E 15	279	Snoqualmie	D 7
323	Ephrata	D 12	3,023	South Bend	E 3
35,486	Everett	C 6	264	South Prairie	D 6
308	Fairfield	D 16	299	Spangle	D 16
489	Farmington	D 16	150,323	Spokane	C 16
169	Ferndale	A 5	1,110	Sprague	D 14
400	Friday Harbor	B 4	251	Springdale	B 15
932	Garfield	E 16	421	St. John	D 15
1,203	Goldendale	G 9	544	Stanwood	B 6
320	Grandview	F 11	761	Starbuck	F 15
453	Granger	F 10	430	Stellacoom	D 7
714	Granite Falls	B 7	387	Stevenson	G 4
405	Hamilton	B 7	576	Sultan	C 7
661	Harrington	D 14	902	Sumas	A 6
237	Hartline	C 12	892	Sumner	D 6
161	Hatton	E 13	1,379	Sunnyside	F 11
3,276	Hillyard	C 16	112,770	Tacoma	D 5
11,666	Hoquiam	E 3	1,694	Tekoa	D 16
664	Ilwaco	F 2	1,038	Tenino	E 5
417	Index	C 7	375	Toledo	F 5
634	Ione	A 16	1,598	Toppenish	F 9
628	Issaquah	D 7	361	Tukwila	D 7
132	Kahlotus	E 13	490	Tumwater	E 4
816	Kalama	G 5	227	Twisp	B 10
2,039	Kelso	F 5	426	Uniontown	E 6
1,219	Kennewick	F 12	13,180	Vancouver	G 5
1,908	Kent	D 6	1,237	Waitsburg	F 14
377	Kettle Falls	A 14	25,136	Wallawalla	G 14
532	Kirkland	C 6	400	Wapato	E 10
288	La Center	G 5	456	Washougal	G 6
603	La Conner	B 5	300	Washtucna	E 14
222	Lakeside	C 10	950	Waterville	C 11
339	Latah	D 16	318	Waverly	D 16
1,551	Leavenworth	C 9	4,050	Wenatchee	D 9
831	Lind	E 13	682	White Salmon	G 7
631	Little Falls	F 4	757	Wilbur	C 13
1,148	Lynden	A 5	899	Wilkeson	D 7
377	McMurray	B 6	405	Wilson Creek	D 12
666	Mabton	F 10	1 140	Winlock	F 4
1,239	Marysville	B 6	384	Woodland	G 5
1,730	Medical Lake	C 15	435	Yacolt	G 6
448	Milton	D 6	263	Yakima	E 10


WASHINGTON
SCALE
Statute Miles, 32=1 Inch.
0 5 10 20 30 40 50 60
Rand McNally's New 11 x 14 Map of Washington.
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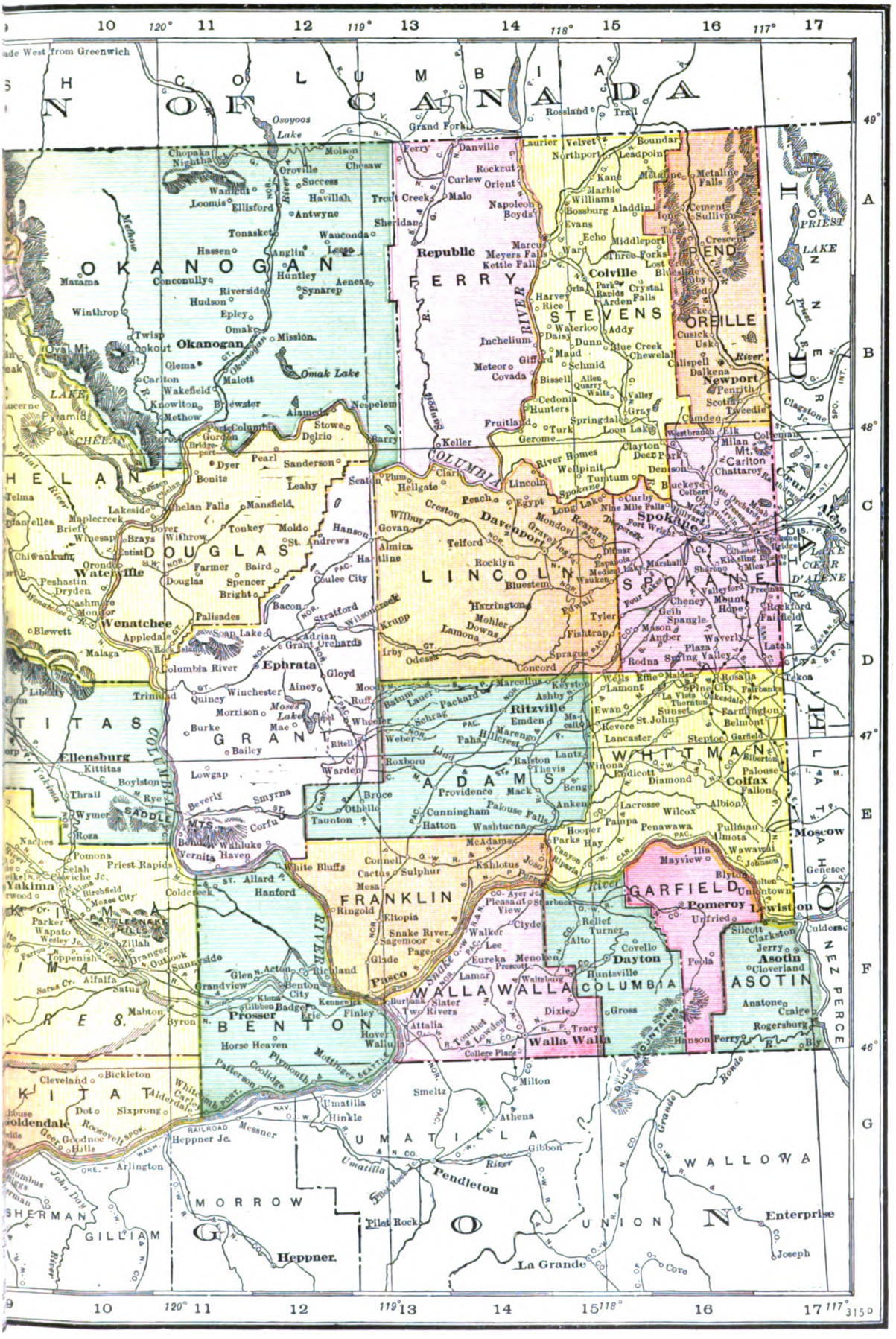
Vancouver
New Westminster
DOMINION
Strait of Georgia
Bellingham
WHATCOM
Mt. Baker
Twin Sisters
VANCOUVER ISLAND
Friday Harbor
SAN JUAN
Strait of Juan de Fuca
VICTORIA
Tatoosh
Neah Bay
Port Angeles
Coupeville
Port Townsend
SKAGIT
Mt. Vernon
Spire Peak
Marblemount
Darrington
Glacier Peak
Bedal
Silverton
CLALLAM
JEFFERSON
SNOHOMISH
Everett
Monte Cristo
Mt. Olympus
Elkpark
Seattle
Skykomish
Wellington
KITSAP
Port Orchard
QUINAULT IND. RES.
GRAYS HARBOR
MASON
Shelton
Tacoma
Eagle Gorge
KING
Aberdeen
Montesano
OLYMPIA
THURSTON
MT. RAINIER NATIONAL PARK
Mt. Rainier
PACIFIC
Chehalis
Centralia
Mineral
Randle
LEWIS
WAHKIAKUM
COLUMBIA RIVER
Cathlamet
COWLITZ
Mt. St. Helens
Mt. Adams
Astoria
CLATSOP
Kalama
COLUMBIA
SKAMANIA
St. Helen
CLARKE
Vancouver
TILLAMOOK
WASHINGTON
Hillsboro
Portland
MULTNOMAH
Hood River
The Dalles
HOOD RIVER
WASCO
Tillamook
YAMHILL
CLACKAMAS
Oregon City
Friend
Railroads
Electric Lines


10 120° 11 12 119° 13 14 118° 15 16 117° 17
ade West from Greenwich
BRITISH COLUMBIA
NORTH OF CANADA
Osoyoos Lake
Grand Forks
Rossland
Trail
49°
A
B
C
D
E
F
G
48°
47°
46°
OKANOGAN
Republic
FERRY
STEVENS
PEND OREILLE
LAKE PRIEST
LAKE PEND OREILLE
Pend Oreille River
Columbia River
Okanogan River
Methow River
Similkameen River
Kettle River
Colville River
Spokane River
Okanogan
Omak Lake
Conconully
Winthrop
Twisp
Oroville
Tonasket
Wauconda
Loomis
Ellisford
Antwyne
Havillah
Molson
Chesaw
Danville
Laurier
Velvet
Northport
Boundary
Leadpoint
Rockcut
Curlew
Orient
Malo
Napoleon
Boyds
Marble
Williams
Bossburg
Aladdin
Metaline
Metaline Falls
Cement
Sullivan
Evans
Echo
Middleport
Three Forks
Crescent
Colville
Harvey
Rice
Orin
Park Rapids
Crystal Falls
Arden
Waterloo
Addy
Inchelium
Daisy
Dunn
Blue Creek
Chewelah
Cusick
Usk
Calispell
Dalkena
Newport
Pennith
Scotia
Meteor
Covada
Gifford
Maud
Schmid
Bissell
Allen
Quarry
Waits
Valley
Grey
Tweedie
Camden
Cedonia
Hunters
Fruitland
Springdale
Loon Lake
Turk
Gerome
Keller
Westbranch
Elk
Milan
Mt. View
Carlton
Chattaroy
Clayton
Deer Park
Denison
River Homes
Wellpinit
Tumtum
Lincoln
Egypt
Long Lake
Curby
Nine Mile Falls
Blackeye
Colbert
Otis Orchards
Hillyard
Spokane
Peach
Creston
Davenport
Wilbur
Govan
Mondovi
Reardan
Fort Wright
Dishman Hills
Mica Peak
Lake Coeur d'Alene
Coeur d'Alene
Post Falls
Hayden Lake
Chelan
Pyramid Peak
Lake Chelan
Entiat River
Wenatchee River
Methow
Twisp
Lookout
Okanogan
Omak
Mission
Carlton
Malott
Wakefield
Brewster
Knowlton
Alameda
Nespelem
Gordon
Bridgeport
Columbia
Stowe
Delrio
Barry
Keller
Dyer
Pearl
Sanderson
Bonita
Leahy
Sealton
Plum
Hellgate
Clark
Lincoln
Egypt
Long Lake
Spokane

course, flowing between the States of Washington and Oregon, breaking through the Cascade Mountains and entering the Pacific Ocean in lat. 46° 15'. Its principal tributaries in eastern Washington are the Pend d'Oreille, or Clark's Fork, which is the outlet of Lake Pend d'Oreille in northern Idaho; the Spokane, one of the largest tributaries, the outlet of Lake Cœur d'Alene, also in Idaho; the Okanogan, flowing from the north through Lake Okanogan in British Columbia; the Methow; Lake Chelan and its outlet; the Wenatchee and the Yakima, flowing down from the Cascade Mountains, and the Snake River, its largest tributary, which rises in the western part of Wyoming and flows through the southern part of Idaho. In western Washington its principal tributaries are the Lewis and the Cowlitz rivers. The other rivers of the State of any considerable size are the Nooksack, Skagit, Stillaguamish, Snohomish, Skykomish, Snoqualmie, Cedar, White, Duwamish, Puyallup and Nisqually, which flow into Puget Sound from the Cascade Mountains and the Chehalis, which flows into Gray's Harbor. The Columbia is navigable for ocean-going vessels to Vancouver and for steamboats over the greater part of its course. The Snake is navigable for more than 150 miles. The Okanogan, Lewis, Cowlitz, Nooksack, Skagit, Snohomish, Duwamish, Puyallup and Chehalis rivers are also navigable for considerable distances.

There are many fresh-water lakes in the State, the largest is Lake Chelan, lying between the eastern ridges of the Cascade Mountains. This lake is 55 miles long, from one to three miles wide and more than 1,500 feet deep in many places. It extends from a point near the Columbia River into the very heart of the mountains, and the tourist can here enjoy the novel experience of sailing for more than 30 miles between high ranges of mountains, rising from the water's edge, whose snow-crowned peaks reach elevations of from 7,000 to 10,000 feet above the sea. This part of the State has some of the grandest scenery in the world. Lake Washington, lying in the western part of King County, bounding Seattle on the east, is a beautiful lake 22 miles long, and from two to four miles wide. The surface of this lake is about 20 feet higher than the mean high tide in Puget Sound, and a government canal has been constructed, at Seattle, to connect it with the sound through Lake Union. Lakes Crescent and Cushman are the largest lakes in the Olympic Mountains and Lakes Wenatchee, Kachhess, Keechelus, Moses and Cle Elum, are the largest in eastern Washington.

Willapa Bay and Gray's Harbor are the only good ports on the Pacific Coast of Washington. Neah Bay, Clallam Bay, Port Angeles and Dungeness are excellent ports on the Strait of Juan de Fuca. Puget Sound, as it is now known, includes all the waters of the great inland sea, which extends easterly from the Strait of Juan de Fuca, and southerly from the national boundary line to Olympia, a distance of about 200 miles. The waters of the Sound are from 60 to 1,000 feet in depth. The rise and fall of the tide ranges from nine to 18 feet. There are no sunken reefs or other dangerous obstructions to navigation. The coast line aggregates about 1,600 miles in length. The principal harbors along the sound are Bellingham Bay, Everett Harbor, Port Townsend, Seattle Harbor or Elliott Bay, Commencement Bay or Tacoma Harbor and Port Orchard. Owing to the fact that Puget Sound is protected on all sides by high mountain ranges, it may be considered as one great harbor, in which vessels can land at almost any point along the whole coast line.

Climate.— The State of Washington is divided as to climatic conditions into two distinct sections — the eastern and western. The Cascade Mountains extending from the north to the south form the line of demarkation. Western Washington has a mild, moist climate, while east of the Cascades the climate is characterized by short hot summers and comparatively cold winters. Western Washington seldom has snow and is free from oppressive heat in the summer. The mean annual maximum temperature at Seattle, a typical point in western Washington, is 58.2°, while the mean annual minimum is 44.6°. The mean annual maximum temperature in Yakima County, eastern Washington, is 64° and the mean annual minimum 35.5°.

Rainfall.— The rainfall in western Washington varies greatly in different localities owing to the mountain ranges and prevailing winds. The heaviest precipitation occurs on the coast of the Pacific Ocean and gradually decreases as it proceeds inland around the south side of the Olympic Mountains and down the Puget Sound Basin. The annual rainfall averages 88.13 inches on the coast at South Bend; 54.96 inches at Olympia; 42.27 inches at Tacoma; 33.9 inches at Seattle and 29.81 inches at Port Townsend. While winter is called the rainy season and summer the dry season, it should be understood that every month in summer has some rainy days and that there is considerable clear weather during the winter months. For a period of 10 years, during the months of December, January and February, the average number of days per month with precipitation to the amount of .01 of an inch has been from 15 to 19, and the average precipitation per month about five inches; the average number of rainy days in July and August for the same period has been five, the average precipitation has been about one inch each month and the average number of rainy days has been 162 per year. Thunder and lightning are of rare occurrence and violent wind storms are entirely unknown.

Geology.— Metamorphic rocks occupy a large portion of the State, being of very frequent occurrence throughout the region of the Cascade Mountains and the Okanogan Highlands. The most important varieties of these rocks are gneiss, schist, marble, slate and quartzite. Granite is found in many localities in very large quantities. Crystalline limestone also occurs in a number of places, particularly in the Puget Sound Basin. The most important volcanic rock in the State is the basaltic rock of the Columbia Plain, which not only extends over a large portion of Washington, but also covers all of southern Idaho, eastern Oregon and northeastern California. Sedimentary rocks cover a large portion of the State. The rocks of the Tertiary period are the best known and are of great economic importance on account of the large deposits of coal and building stone which they contain. The Eocene rocks are nearly all coal-bearing. Pleistocene sediments, in the nature of glacial deposits, occur

in the western and northern parts of the State. In all of the mountainous districts, except the Blue Mountains, glacial deposits are found, and the valleys are largely occupied by deep terraces and moraines. The glacial deposits of the Puget Sound Basin consist of till, with stratified sand, clay and gravel, in all averaging not less than 500 feet in thickness.

Soil, Agriculture and Irrigation.— There are about 40,000 square miles of forested land in the State, the trees being mostly conifers, with some oak, maple, cottonwood and other deciduous varieties. Nearly all of the western section of the State was originally covered with forests, while in the eastern section the forest areas are confined principally to the slopes of the mountains and the highlands. The soil in western Washington consists largely of glacial drift, being a mixture of sand, gravel and clay upon the uplands, which is very productive when properly handled. In the lower lands there are large areas of sandy loam and semi-peat lands, rich in organic matter, which are very fertile and grow all kinds of crops that thrive in a porous soil.

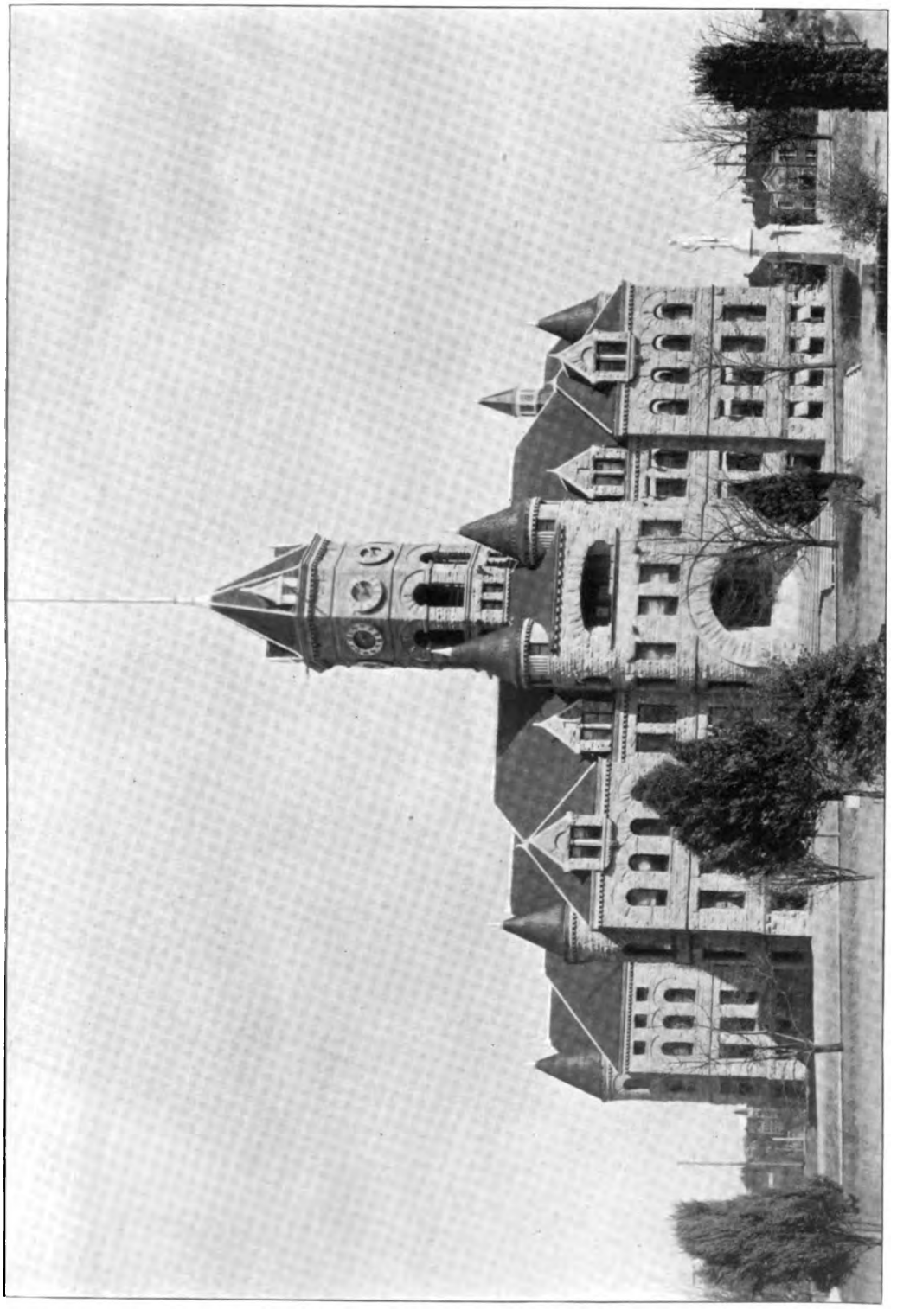
In eastern Washington the soil has been formed by the disintegration of basaltic or lava rocks. It is of a dark color, of fine texture and contains no gravel and very little sand. It is what might be termed a clay loam. It has been stated by eminent authorities that this is the best wheat land in the world, a statement which is proved by the enormous crops produced each year. The higher lands of the Columbia plain are devoted principally to the cultivation of wheat, which is the most important agricultural product of the State. The annual crop of wheat averages about 40,000,000 bushels, and the average yield per acre is about 25 bushels.

In the lower lands of the eastern section the rainfall is insufficient to bring crops to maturity and irrigation is carried on to a considerable extent with great success. There are now about 547,000 acres of irrigated lands under cultivation, and about 130,000 acres more under ditch and ready for cultivation. Numerous irrigation projects are in progress or in contemplation which will probably result in the reclamation of thousands of acres more within the next few years. The irrigated lands produce wonderful crops of fruits, vegetables, hay, hops and grain. The climate is very favorable and a great variety of apples, peaches, plums and kindred fruits are raised in great abundance, together with grapes, strawberries, blackberries, raspberries and other small fruits of every kind. The fruits raised in eastern Washington are beautifully colored and of most excellent flavor. The soil of the irrigated section is admirably adapted to the cultivation of all kinds of vegetables, and especially to the cultivation of potatoes, of which large quantities are produced each year. Alfalfa is one of the chief forage plants, producing three or four crops during the season and yielding from five to eight tons of hay per acre. Timothy, clover and other grasses are also raised quite extensively. Hop raising is an important industry, the average crop being 40,000 bales per year. All kinds of cereals are also cultivated to some extent. The Okanogan Highlands and the slopes of the Cascade Mountains furnish extensive ranges for cattle and sheep, which are raised in large numbers. With the settling up of the country, however, the ranges are becoming more restricted year by year, and, as a consequence, domestic methods of stock raising are being adopted with a resulting yearly increase in production.

In western Washington diversified farming, dairying and fruit raising are the principal agricultural pursuits. This section of the State is admirably adapted to the dairying industry, owing to the rich soil and the moist, warm climate, which combine to produce an abundance of nutritious grasses, hay and other stock food, and excellent water. The home market is one of the best in the world, on account of the large population engaged in manufacturing, lumbering, fishing and mining, and the trade with Alaska. There are 186 creameries and 13 condensed milk factories in the State. All kinds of stock do well in this section and large numbers of horses and hogs are raised. The breeding of Angora goats has also been undertaken with marked success and is becoming an important industry. Hop raising is carried on quite extensively in the river valleys, the average crop being about the same as in eastern Washington; considerable small grain is raised in this section, especially upon the flat lands along the shores of Puget Sound. About 27 per cent of the total land area of the State is included in farms. Of this (11,712,238 acres) about 55 per cent is improved farm land. The average size of farms in the State is 209 acres and there are 56,192 farms in the State. Farm land in 1910 had an average value of $44.18, but has since increased about 50 per cent. About five-sixths of all farms are operated by owners. About two-thirds of all farmers are native-born, the remainder coming from Germany, Sweden, Norway, Canada and England. At the time of the last census there were 673 Indian farmers, 316 Japanese, 59 Chinese and 77 negroes.

The wheat yield in 1918 was 26,429,000 bushels, valued at $51,801,000; barley yielded 2,630,000 bushels, valued at $3,024,000; oats yielded 8,370,000 bushels, valued at $8,203,000; corn, 1,634,000 bushels, valued at $2,778,000; potatoes, planted to 65,000 acres, yielded 8,580,000 bushels, valued at $8,666,000. The hay crop was 1,429,000 tons, valued at $36,297,000. The following was the acreage in the year above named: Corn, 43,000; barley, 173,000; wheat, 2,191,000; oats, 310,000; and hay, 794,000 acres. On 1 Jan. 1919 the domestic animals were 303,000 horses, 20,000 mules, 216,000 milch cows, 307,000 other cattle, 780,000 sheep and 317,000 swine. The wool clip in 1917 totaled 4,988,000 pounds of wool. The fruit-growing area has increased over 100 per cent in the last two years.

Lumbering.— The greatest industry of the State is the manufacture of lumber and shingles. There are in the State 500 lumber mills, which cut 4,500,000,000 feet annually, and 292 shingle mills, with an output of 7,000,000,000 shingles. There are also more than 300 logging-camps and a number of planing mills and wooden-ware factories. These mills, factories and camps employ more than 65,000 men; the annual payroll amounts to $89,500,000 and the value of the product is about $112,500,000 annually. The most valuable tree of the State is yellow, or Douglas fir (*Pseudotsuga Douglasii*), which comprises almost one-half of the merchantable timber. The next most valuable is the red cedar (*Thuya gigantea*), used extensively in the manufacture of shingles. Western hemlock



State Capitol at Olympia

(*Tsuga mertensiana*), yellow pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*), spruce (*Picea sitchensis*) and western larch (*Larix occidentalis*), are also valuable commercial varieties. At the present rate of consumption, the amount of standing timber will supply the mills of the State for at least 100 years. Almost 400,000,000,000 feet of timber is untouched in this State.

Mining.— Coal is first in importance in the mining resources of the State. The greatest deposits are found in the Puget Sound Basin and on the eastern slopes of the Cascade Mountains in Kittitas County. The coal fields are extensive and practically inexhaustible. The veins vary from five to 25 feet in thickness. The quality ranges from a rich bituminous coking coal to brown lignites. Deposits of anthracite have also been discovered in the vicinity of Mount Rainier and Mount Baker. In 1919 there were 70 mines in operation, employing 5,847 workmen. The aggregate output during the year 1919 was 4,000,000 tons of coal and 96,000 tons of coke. The mines of Washington and British Columbia practically supply the Pacific Coast States and Alaska with coal.

There are large deposits of iron ore in the Cascade Range and in the Puget Sound Basin. Brown hematite ore is found along the Skagit River. Magnetic ore is found in King County and bog ore occurs in several localities. Copper and lead are found in the Cascade Mountains and the Okanogan Highlands. Lead, zinc, arsenic, molybdenum, tungsten and platinum also are found.

The precious metals are found in several localities and sufficient development work has been done to prove the existence of mines of great value. In the northeastern part of the State the mines have been worked on an extensive scale. The prevailing country rock in that district is limestone and the prinicipal mineral is argentiferous galena. Gold and silver have been discovered in many places throughout the whole extent of the Cascade Range and in the Okanogan Highlands. The yearly output of metal mines is about $3,000,000. Clay products are valued at $1,500,000 yearly. The total mineral output, exclusive of coal, is valued at $18,000,000 yearly.

Fisheries.— Salmon fishing is one of the important industries of the State, and her brands of canned salmon are known in every market in the civilized world. The capital invested in the fishing industry exceeds $15,000,000; the number of persons directly dependent on the fisheries is 50,000 to 60,000, while the number actually employed is about 15,000, and the wages paid amount to more than $4,000,000 annually. The value of the yearly product of the canneries ranges from $12,000,000 to $30,000,000, according to the run of fish, and the value of the fresh, salted and smoked product will amount to about $3,000,000 more each year. There are about 71 salmon canneries operated in the State. The propagation of salmon was undertaken by the State in 1895, and since that time 38 hatcheries have been established with a capacity of from 5,000,000 to 10,000,000 fish each per season. This work had been very successful and has resulted in an increase of the supply of salmon. In addition to the salmon industry, the cod, halibut, mackerel and herring fisheries on the banks off the coast of Washington and Alaska give employment to a large number of men. Large quantities of halibut are shipped to the Atlantic Coast cities in refrigerator cars and that line of fishing has been developed into an important industry. Oyster culture is also carried on to quite an extent in the shallow waters of Puget Sound and Willapa Harbor. Clams, crabs and shrimp are abundant, and many kinds of game fish are found in the streams and fresh-water lakes.

Game.— There is a great abundance of large and small game in Washington. Deer are found in all sections, elk abound in large numbers in the Olympic Mountains and to some extent in the Cascades. Mountain goats are numerous on the higher ranges of the Cascades. There are a few mountain sheep on the lofty mountains. Black bears, panthers and wildcats are common in the mountains. Waterfowl, pheasants, quail, prairie chickens and several kinds of grouse are plentiful.

Washington exceeds every other State in its game fishing. In 1918 20,000,000 trout fry were liberated from its hatcheries.

Manufacturing.— When the census of 1914 was taken, there were 3,289 manufacturing establishments reported in this State. There are at present probably 5,000 such establishments. The number of wage-earners employed is about 100,000; the amount of wages and salaries paid is $150,000,000 and the value of the products $5,000,000,000. The largest manufacturing industries consist of lumber mills, airplane factories, flour and grist mills, shipyards, iron and steel works, paper mills, smelters, beet-sugar plants, fruit and vegetable canneries, fruit juice factories, furniture factories, pottery and terra-cotta works, creameries and condensed milk factories, fireworks and fertilizer plants. Since 1914, manufacturing has increased very rapidly. Many new industries have been established and old ones have been greatly extended in order to keep pace with the growing markets. There are about 150 flour mills in the State producing more than $50,000,000 worth of flour per annum, which is marketed largely in the Orient, South America and Europe. Shipbuilding is carried on at a number of localities on Puget Sound and at Gray's Harbor. The Puget Sound Navy Yard is equipped for the construction and repair of all kinds of ships and boats. The Pacific fleet is based on this station. The battleship *Nebraska* was built in 1904 in Seattle. Washington produced more than 30 per cent of the vessels constructed during the war. Both steel and wooden vessels of various types are built. The superiority of Washington fir for use in ship construction is recognized in all parts of the world, on account of its great strength and the length of clear timber obtainable. The manufacture of iron and steel is also carried on extensively. Several open-hearth furnaces are operating at Seattle and producing a high grade of steel. With an abundance of raw materials, easily assembled at low prices, and with a large market for the product, the manufacture of iron and steel promises to become one of the leading industries.

Nearly all the rivers of the State are mountain streams, with a large flow of water at all seasons of the year, and many rapids and falls, which, under modern methods of transmission are capable of supplying power for industrial

purposes at a low cost and in almost unlimited quantities. Large power plants have already been installed on the Snoqualmie and Puyallup, Cedar and other rivers. The city of Seattle has constructed a plant upon the Cedar River and is building another on the Skagit River to supply the municipality with light and power for both public and private purposes. Several other plants are in the course of construction in the vicinity of the larger cities. The State is credited with having 4,930,000 horse power or 18 per cent of the total potential hydro-electric power of the country.

Transportation.— Washington is well provided with transportation facilities, both by water and by railroad. The rivers, lakes, Puget Sound, with its numerous arms, bays and inlets; the strait of Juan de Fuca and the Pacific Ocean make all parts of the western section, and many parts of the eastern section of the State easily accessible by boats. There are 1,200 miles of navigable streams in the State, about 8,000 miles of railroad and 1,500 miles of electric roads. The chief steam railroad systems are the Northern Pacific, Great Northern, Oregon-Washington Railway and Navigation Company, Chicago, Milwaukee and Saint Paul, Pacific Coast Railroad, Spokane Falls and Northern, and Seattle, Portland and Spokane. The Burlington system, the Canadian Pacific and Grand Trunk Pacific also reach Puget Sound under traffic arrangements with the other roads. Electric railways are now in operation between most of the important cities. A number of other lines are projected. A large fleet of steamers is operated upon the waters of Puget Sound carrying freight and passengers in the local traffic. Steamship lines are operated between Seattle, Puget Sound and Alaska, British Columbia, California, Europe, the Orient and the Atlantic Coast, and between Gray's Harbor and San Francisco. In addition to the regular lines, a large commerce is carried on by sailing vessels and itinerant steamships.

Commerce.— During the calendar year of 1918, vessels aggregating 3,329,294 tons entered, and vessels aggregating 3,423,541 tons cleared in the foreign trade of the Washington Customs District, which includes all the ports of Washington except the Columbia River. The value of the foreign imports was $300,990,136, and the value of the foreign exports was $296,190,778 in the Washington district. In 1893 the imports amounted to only $839,709 and the exports to $5,093,436. A very large commerce is carried on between Washington and the other Pacific Coast States, Alaska, Hawaii and the Philippine Islands. Alaska's commerce alone in 1918 was valued at $127,049,132. In addition about $195,000,000 in foreign imports were landed on Puget Sound in bond to other cities.

Education.— There are 2,554 school districts in the State, in 793 of which schools of more than one room are maintained. In 1919 the total number of children of school age was 348,771 and the enrolment at the schools was 272,325. The reports of the State superintendent of public instruction show that 9,770 teachers were employed in 1917 and 1918. Total disbursements were $14,058,211 in 1918. The value of school property, exclusive of school lands, was $36,596,668. The average length of the school sessions in the country districts is approximately eight months. In the towns and cities the sessions are usually nine months. Nearly every town of from 1,500 upward has a high school with a three or four year course. In a number of places several country districts have combined to form a junior high school district. The number of students in attendance at high schools in 1918 exceeded 37,000. For higher education the State maintains the University of Washington at Seattle with 300 instructors and enrolment of over 6,000 students; the Agricultural College and School of Science at Pullman, 1,900 students; and normal schools at Cheney, 2,524 students; Ellensburg, 600 students, and Bellingham with 2,313 students.

In addition there are 133 private educational institutions. The leading private colleges are Whitman College at Walla Walla; Whitworth College, Spokane; Gonzaga College, Spokane; College of Puget Sound, Tacoma Vashon College, Burton and Colfax College, Colfax.

Charitable, Reformatory and Penal Institutions.— The State maintains separate institutions for the care and education of the blind, deaf and feeble-minded; a penitentiary, three hospitals for the insane and two soldiers' homes. The boys' training school is located at Chehalis, and the girls' training school at Grand Mound. Each of these institutions has a large farm and is well provided with shops and the necessary equipment for educating the youth in useful trades. The penitentiary is located at Walla Walla. In this institution there is a jute mill which gives employment to a large number of the inmates. The Western Washington Hospital for the Insane is located near Steilacoom, the Northern Hospital for the Insane is at Sedro-Wooley and the Eastern Washington Hospital at Medical Lake. The Soldiers' Home is located at Orting and the Washington Veterans' Home at Port Orchard. All of these State institutions are under the general supervision and management of a board consisting of three members appointed by the governor, known as the State Board of Control.

Banks and Finance.— There were in 1919, 386 banks; of these, 84 were national, 293 State and 5 foreign. The total resources of all banks in 1919 was $469,644,256. The assessed valuation of real and personal property in the State in 1919 was $1,060,620,838 and the State tax levy, $10.44 per 1,000. The assessed valuation of real property in 1917 amounted to $702,944,238, and of personal property to $136,238,708. In 1917 the valuation of railways was, $341,371,132; electric lines, $44,498,275; telegraphs, $889,147. The outstanding bonded debt was paid off in 1911. For the year ending 30 Sept. 1918 the revenue of the State was $15,643,321, which was increased to $20,251,757 by the balance over of $4,608,436 from the year previous. The disbursements during the year named amounted to $14,878,937, leaving a balance on hand on 30 Oct. 1918 of $5,372,820.

Government.— The State officers are as follows: Governor, lieutenant-governor, secretary of state, treasurer, auditor, attorney-general, superintendent of public instruction, commissioner of public lands and insurance commissioner, who are elected for terms of four years. The legislature of the State has biennial sessions and consists of a senate and house of representatives. There are 42 members of the senate, one-half of whom are elected every two

WASHINGTON

Photo. by Ashabel Curtis

1 Mount Rainier and a Washington Forest

2 Irrigation in the Yakima Valley

WASHINGTON

Courtesy of Washington State Bureau

1 A Lumber Shipping Port

2 A Western Logging Scene

years to hold office for terms of four years. The house of representatives consists of 97 members, elected biennially for terms of two years. The judicial department is divided into a Supreme Court and Superior Courts. There are nine judges of the Supreme Court whose terms are six years, and 60 judges of the Superior Courts, elected for terms of four years. The whole State is under county organization, the affairs of each county being administered by a board of county commissioners consisting of three members. The State is represented in Congress by two senators and five representatives.

Population and Divisions.—As shown by the United States census reports, the population of Washington was 11,594 in 1860; 23,955 in 1870; 75,116 in 1880; 349,390 in 1890. The United States census of 1910 reported the population as 1,141,990 and estimated it in 1918 at 1,660,578.

There are 39 counties in the State, which, with their county-seats, are named as follows:

Adams, Ritzville.	Lewis, Chehalis.
Asotin, Asotin.	Lincoln, Davenport.
Benton, Prosser.	Mason, Shelton.
Grays Harbor, Montesano.	Okanogan, Okanogan.
Chelan, Wenatchee.	Pacific, South Bend.
Clallam, Port Angeles.	Pend Oreille, Newport.
Clarke, Vancouver.	Pierce, Tacoma.
Columbia, Dayton.	San Juan, Friday Harbor.
Cowlitz, Kalama.	Skagit, Mt. Vernon.
Douglas, Waterville.	Skamanis, Stevenson.
Ferry, Republic.	Snohomish, Everett.
Franklin, Pasco.	Spokane, Spokane.
Garfield, Pomeroy.	Stevens, Colville.
Grant, Ephrata.	Thurston, Olympia.
Island, Coupeville.	Wahkiakum, Cathlamet.
Jefferson, Port Townsend.	Walla Walla, Walla Walla.
King, Seattle.	Whatcom, Bellingham.
Kitsap, Port Orchard.	Whitman, Colfax.
Kittitas, Ellensburg.	Yakima, North Yakima.
Klickitat, Goldendale.	

There are 99 places in the State of over 1,000 population; 52 of over 2,000 and eight of over. 20,000. The metropolis is Seattle, on Puget Sound, with 380,000 inhabitants, estimated in 1919. Tacoma 120,000, Spokane 130,000, Bellingham 34,553, Everett 38,810, Walla Walla 24,000, Yakima 21,000 and Aberdeen 20,000. All of the cities named are important commercial and manufacturing centres.

Indians.—According to the annual report of the Commission of Indian Affairs there are 11,083 Indians living upon the 12 reservations in the State. The reservations contain 1,699,807 acres of land. The largest reservations are the Makaw and Quinault reservations on the Pacific Coast; the Tulalip and Puyallup reservations on Puget Sound and Yakima, Colville and Spokane reservations in eastern Washington. There is also a large number of Indians who do not live upon the reservations. Many of them are engaged in agriculture and a considerable number work in the logging-camps and fisheries.

History.—The first record in history of the region which is now the State of Washington, was the discovery in 1592 of the Strait of Juan de Fuca by a Greek pilot of that name in the service of the viceroy of Mexico. In 1775 a Spanish navigator, Capt. Bruno Heceta, sailed along the coast and discovered the mouth of the Columbia, and was unable to enter the river. In 1792 Capt. Robert Gray, a New England navigator, sailed up the North Pacific Coast on a voyage of exploration and on 11 May he discovered the mouth of the Columbia, sailed into the river, explored it for about 15 miles and gave it the name of his ship. It was this discovery and the exploration that gave the United States their strongest claim to the territory drained by the Columbia, which was known as the "Oregon Country." In the same year Capt. George Vancouver of the British navy, explored the waters of Puget Sound. During the next few years a number of other navigators visited the coast and it soon became quite well known. The first overland exploration was the expedition of Lewis and Clark of the United States army in 1805–06. This expedition, sent out by President Jefferson, traversed the Mississippi Valley, crossed the Rocky Mountains and followed the Columbia River to its mouth, where they spent one winter. The next military expedition was that of 1843 under Capt. John C. Frémont, which reached Vancouver on the Columbia. The first United States naval expedition was the exploration of Puget Sound by Capt. Charles Wilkes in 1841. The first white people to settle in Washington were the traders of the Northwest Fur Company, who established posts in eastern Washington in 1811. The next white settlement was established by Dr. Marcus Whitman in 1836 near the site of the present city of Walla Walla. The first settlement in western Washington was at Tumwater on Puget Sound in 1845. The ownership of the country north of the Columbia River was claimed by both Great Britain and the United States until 1846, when, under the Buchanan-Pakingham treaty, Great Britain took all the territory north of the 49th parallel, and the United States all of the territory south of that parallel, except the south end of Vancouver Island. The American territory was organized as the Territory of Oregon, 14 Aug. 1848. On 2 March 1853 that portion lying north of the Columbia River and the 46th parallel was organized as the Territory of Washington. With the discovery of gold in eastern Washington, a great increase of population followed, and the Indians becoming alarmed for their hunting grounds, resolved to exterminate the whites. This led to the Indian War of 1855–56, and there were still further troubles with the Indians in 1857, at the time of the rush to the gold fields of British Columbia, but the greatest rush was after the discovery of gold at Salmon River in 1860. At the time of the treaty between Great Britain and the United States in 1846, the 49th parallel had been accepted as the boundary to the channel between Vancouver Island and the mainland, and thence down that channel to the sea. In 1859 a dispute arose as to which channel was meant, and this was not settled until 1872, when the claims were referred to arbitration and decided by the German emperor in favor of the United States. On 22 Feb. 1889, Congress passed an enabling act providing for the admission of the State of Washington into the Union. The State constitution was adopted and ratified by the people at an election held 1 Oct. 1889, and on 11 Nov. 1889, in accordance with the provisions of the enabling act, the President of the United States proclaimed the admission of the State of Washington into the Union.

The growth of the population of Washington was very slow until the advent of the first railroad in 1884, on account of its remoteness and the difficulty of reaching it from the Eastern States. Since that time the development of the

country has been phenomenally rapid. The establishment of regular steamship lines between Puget Sound and the countries of the Orient, the trade which has grown up as a result of the great discoveries of gold in Alaska and the Yukon territory in 1897, and the development of commerce between this State and the new island possessions in the Pacific Ocean, are some of the leading factors which have caused the wonderful progress of the past few years.

Anti-Chinese riots occurred in 1885–86 and many lives were lost and much property destroyed by mobs. At the Federal elections of 1892 the State selected Republican electors; four years later a fusion ticket of Democrats and Populists captured a majority of its votes; in 1900, 1904 and 1908 the State chose Republican electors. Woman suffrage was granted in November 1910 by a large majority. In the following year the chief executives of Tacoma and Seattle were recalled from office by popular vote. Roosevelt received 111,179 votes in 1912 to 87,674 cast for Wilson and 71,252 for Taft. A Democrat was elected governor at this same election, which also declared for Statewide prohibition to go into effect 1 Jan. 1916.

The war with Germany caused a sudden expansion of the State's industrial activities, especially in shipbuilding. After the war considerable labor disturbances marked the State's industrial life. Radical agitators, mostly of the I. W. W. stripe, endeavored to fan the flame of discontent caused by high prices and an inflated currency, and seized every opportunity to make recruits to their ranks Their activities reached their climax at Centralia on 11 Nov. 1919, when, during a celebration of the anniversary of Armistice Day, a band of the I. W. W. fired several shots into a passing parade of members of the American Legion, killing four and seriously wounding many others. This outrage caused the law-abiding citizens, not alone of Washington, but of every other State, dishonored by the presence of this lawless foreign element, to take prompt measures against these revolutionaries. One leader of the band was lynched at Centralia and after a few days order was restored.

GOVERNORS OF WASHINGTON.

TERRITORY.

Isaac I. Stevens	1853–57
C. H. Mason, acting	1857
Fayette McMullen	1857–58
C. H. Mason, acting	1858–59
Richard D. Gholson	1859–60
Henry M. McGill, acting	1860–61
William H. Wallace	1861
L. J. S. Turner, acting	1861–62
William Pickering	1862–66
George E. Cole	1866–67
E. L. Smith, acting	1867
Marshall F. Moore	1867–69
Alvin Flanders	1869–70
Edward S. Salomon	1870–72
Elisha P. Perry	1872–80
William A. Newell	1880–84
Watson C. Squire	1884–87
Eugene Semple	1887–89
Miles C. Moore	1889

STATE.

Elisha P. Perry	Republican	1889–93
John H. McGraw	"	1893–97
J. R. Rogers	Democrat-Populist	1897–1901
Henry G. McBride, acting		1901–05
Albert E. Mead	Republican	1905–09
Samuel C. Cosgrove	"	1909
M. E. Hay	"	1909–13
Ernest Lister	Democrat	1913–1919
Louis F. Hart, acting	Republican	1919

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FRANK C. DOIG,
Director of Publicity, Seattle Chamber of Commerce and Commercial Club.

WASHINGTON, Ark., town, county-seat of Hempstead County, on the Arkansas and Louisiana Railroad, about 110 miles southwest of Little Rock. It is in an agricultural region, and its industries are connected chiefly with farm products. It has considerable trade, especially in the shipments of grain, vegetables, cotton and tobacco. Pop. about 400.

WASHINGTON, Conn., township in Litchfield County, on the Shepaug River, about 90 miles northeast of New York and 38 miles north of Bridgeport. It contains the villages of Marbledale, New Preston, Woodville, Washington, Washington Depot and Romford. Its industries are connected with farm products and caring for guests in summer, as it is a favorite summer resort. Pop. about 1,747.

WASHINGTON, D. C., the capital of the United States, coterminous with the District and, therefore, occupying a territory of 69¼ square miles. The city is under the exclusive jurisdiction of the Congress; it is situated on the Potomac River, 100 miles above its mouth, 40 miles south by west of Baltimore, 136 miles from Philadelphia, 226 miles from New York, 1,109 miles from New Orleans and 3,118 miles from San Francisco.

The exact location of Washington is, long. 76° 58′ W.; lat. 38° 53′ N. The climate of this locality is mild and even, the mean average annual temperature for the past quarter-century being 55°; average summer temperature for this period, 75°; average winter temperature, 35.

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Weather Bureau
Hotel Grafton
De Sales St.
Connecticut Ave.
Vermont Ave.
THOMAS Avenue
Department of Justice
Cochran Hotel
Dewey Hotel
Hamilton Hotel
WASHINGTON
FARRAGUT SQUARE
McPHERSON SQUARE
Hotel Bellevue
FRANKLIN SQUARE
Gordon Hotel
New Hampshire Ave.
Hotel Raneroft
Albany Hotel
New Richmond Hotel
Shoreham Hotel
Fredonia Hotel
Dept. of Commerce and Census Bureau
Hotel Powhatan
LA FAYETTE SQUARE
Belasco Theater
Masonic Temple
State, War and Navy Departments
Y.M.C.A.
Keith's Theater
Treasury Department
Virginia Avenue
Civil Service Com. Emergency Hospital
Executive Mansion (White House)
Willard Hotel
Ebbitt House
Ariadore Hotel
Columbia Theater
National Theater
RAWLINS PARK
Corcoran Art Gallery
Grand Hotel
Polis Theater
Sterling Hotel
U.S. NAVAL MUSEUM OF HYGIENE
Navy Building
Municipal Building
W. U. CO. STA.
New York Avenue
Continental Hall (D. A. R.)
EXECUTIVE GROUNDS
Post Office Department
Ohio
Pan American Union
Upper Water St.
Eldridge St.
Public Baths
Agricultural Department
POTOMAC
Lincoln Memorial
Washington Monument
Bureau of Engraving and Printing
Speedway
P.B.& W. R.R.
SOUTHERN R.R.
TIDAL RESERVOIR
Outlet
POTOMAC RIVER
Band Stand
Inlet
WASHINGTON
PARK
WASHINGTON, D. C.
(MAIN PORTION)
SCALE
0
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¾
Rand McNally's New 11 x 14 Map of Washington, D. C. (Main Portion)
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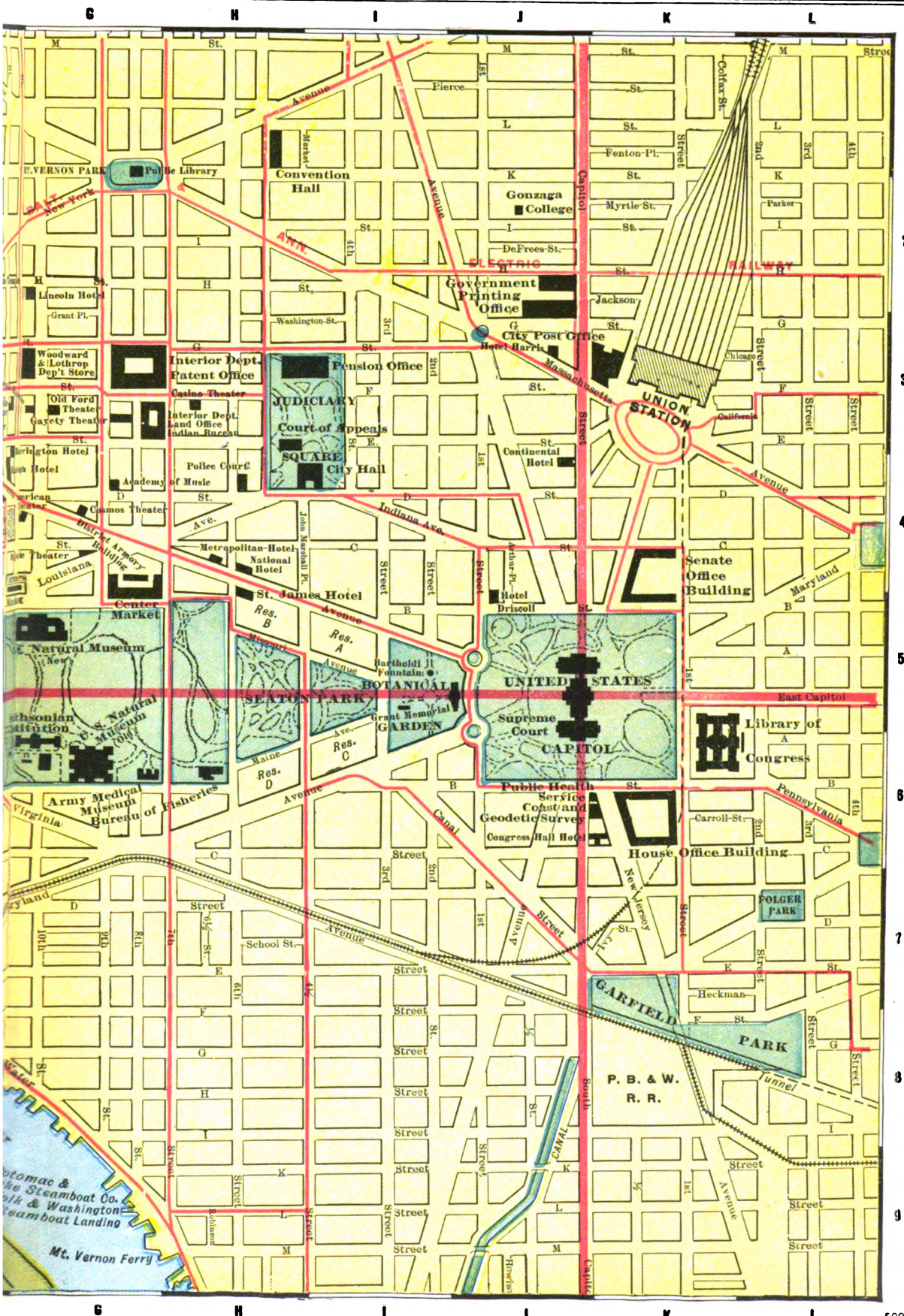


G H I J K L
1 2 3 4 5 6 7 8 9
Public Library
Convention Hall
Gonzaga College
Government Printing Office
City Post Office
Hotel Harris
Lincoln Hotel
Woodward & Lothrop Dep't Store
Interior Dept. Patent Office
Pension Office
JUDICIARY SQUARE
Court of Appeals
City Hall
Casino Theater
Interior Dept. Land Office Indian Bureau
Old Ford Theater
Gayety Theater
Police Court
Academy of Music
Continental Hotel
UNION STATION
Cosmos Theater
Metropolitan Hotel
National Hotel
St. James Hotel
Hotel Driscoll
Senate Office Building
Center Market
Natural Museum
Bartholdi Fountain
BOTANICAL GARDEN
SEATON PARK
UNITED STATES CAPITOL
Supreme Court
Library of Congress
Army Medical Museum
Bureau of Fisheries
Public Health Service
Coast and Geodetic Survey
Congress Hall Hotel
House Office Building
FOLGER PARK
GARFIELD PARK
P. B. & W. R. R.
Mt. Vernon Ferry
Potomac & Lake Steamboat Co.
Polk & Washington Steamboat Landing
Pierce
Fenton Pl.
Myrtle St.
DeFrees St.
Jackson
Washington St.
Massachusetts
Indiana Ave.
Arthur Pl.
Maryland
East Capitol
Pennsylvania
Canal
New Jersey
Ivy St.
Heckman
Tunnel
Carroll St.
School St.
Robinson
Howison
Virginia
Louisiana
Missouri
Maine
Res. A
Res. B
Res. C
Res. D
Capitol
Street
Avenue
Ave.
Colfax St.
Parker
Chicago
California
Washington
Market
Grant Pl.
Arthur Pl.
John Marshall Pl.
Grant Memorial
Tunnel
500

Washington is approached by both railway and waterway, as well as by an admirable system of highways constructed to meet the requirements of the recent enormous increase in motor travel. Steamboat lines connect it with Baltimore to the north, and with Norfolk to the south. From the north and west both the Pennsylvania and the Baltimore and Ohio railways lead into the city, from the west the Chesapeake and Ohio and from the south the Southern, the Seaboard Air Line and the Atlantic Coast Line.

A bird's-eye, or air-ship, view of Washington discloses a forest-like area, banded from north to south, from east to west, and from certain radiating centres, by broad thoroughfares. At frequent intervals the wealth of greenery grows compact in park formation. Dome, and spire, and turret, lift through the verdure. And within it there is the glow of gilded roof, the gleam of marble wall and the massed grays and reds of every city's usual architecture. From this high point the northern bank of the Potomac is seen to form a border of urban landscape, bending to the river's way, from the eastern to the western limits of the city, in a picturesque sweep of green. This effect of living green is the dominant note of the whole. With its 600 miles of street trees, exclusive of those belonging to the parks, Washington challenges the world in this respect, Buenos Aires alone standing as its only possible rival. This uplifted field of observation makes disclosure, also, of the spread of the city and the direction of its most vigorous growth. It reveals, besides, the number and location of attractive suburbs that are so rapidly gathering upon its outskirts to the north and northwest. And, above all, it brings into a distinct and related view those points that mark Washington as the seat of government. On a commanding height in the eastern part of the city rises its most notable and magnificent structure, the Capitol. A block away from this, to both north and south, are two commodious and impressive buildings of white marble, devoted to the office use of senators and representatives respectively. A block to the east of it is the Library of Congress. A mile to the west of the Capitol is the White House, flanked on the east by the Treasury of the United States, and on the west by the State, War and Navy building. This outline sketch summarizes the essentials of the city as the heart of the Federal territory. A line flung westward across the Mall, from the Capitol to Arlington National Cemetery on the Virginia side of the Potomac, includes, besides these two points, Washington Monument and Lincoln Memorial.

Streets and Avenues.—The projectors of Washington possessed the vision of a city that was, eventually, to fill the District of Columbia to its borders. Therefore, it was to this scale that they planned. The Capitol was selected as the keynote of the scheme. Through the centre of its site a line was drawn from north to south, and another from east to west. Both extended to the limits of the District. The four sections laid off by these lines were, according to relative position, named, northeast, northwest, southeast and southwest, Washington. This device was calculated to reduce to a clear and simple system the complex problem of street naming that great cities encounter. These initial lines became streets, the one extending north and south from the Capitol, North and South Capitol streets respectively. The one running east from the Capitol was named East Capitol street. Toward the west, the Mall was set off for a great city park. This, to the width of four city blocks, extends straight west from the Capitol to the Potomac River. Lines drawn parallel to the two original ones served as the plan by which the entire District might, as need arose, be transformed into a huge area of rectangular city blocks, bounded by a regular system of numbered and lettered streets, the former extending north and south, the latter east and west. Since the street naming started from the two initial lines that divided the city into four sections, each lettered and numbered street became one of a four-fold duplicate. Identification would be rendered simple and complete, however, by virtue of the section to which each belonged. Superimposed upon this rectangular system of streets were the avenues radiating from the Capitol and certain other centres. These as they developed were to be given the names of the States of the Union. The original plan of city growth has been adhered to with fidelity. The distinction of Washington's streets lies in their width, their finish and their luxuriant tree borders. The narrowest street is 60 feet wide. They range from this figure to 160 feet in width. Pennsylvania avenue, extending from the Capitol, east to the Eastern branch and west to Rock Creek, paved with asphalt its entire length, is the broadest of the avenues. Sixteenth street is the widest and most beautiful of the streets. The city report of 1916 shows 513.69 miles of paved streets, its mileage of asphalt paving exceeding that of all other kinds combined. Scientific street-tree culture is vigorously pursued. Already 600 miles of street trees contribute markedly to the beauty of the city.

Parks.—The park system of Washington is an imposing one of certain unique and individual features. The parks of the city separate, roughly, into large and small parks. In the first group are Rock Creek Park of 1,609 acres, a tract of great natural beauty lying to the west of the city. Adjoining it on the southwest is Zoological Park with 166 acres. Potomac Park of 723 acres borders the river from Georgetown to the Eastern branch. The Mall, containing 306 acres, issues, so to speak, out of the beautiful 50-acre park surrounding the Capitol and, running west in a narrow line, meets the Potomac River a mile and a half away, where it joins Potomac Park. Between this point of juncture and the southern boundary of Rock Creek Park are 162 acres which will, finally, serve to bring into complete existence a splendid continuous parkway that will sweep the entire western and southern borders of the city. The Mall connects the Capitol with this great parkway. In process of construction is a beautiful plaza connecting the Capitol with the new and imposing Union Station, a symbolic connection, also, with the federated States of which the capitol itself is the focal point. To the north of Washington is the Soldiers' Home in the midst of 600 acres.

of beautifully planned and matured grounds. Adjoining Soldiers' Home to the south is a parklike area of 29 acres. This contains, in picturesque arrangement, the city filtration plant. At a point about 15 miles above the city, its water supply is drawn from the Potomac through aqueducts into large storage reservoirs from which it passes into the filtration plant. The water supply with everything relating to it is under the charge of the United States government, a sufficient water rent being charged consumers.

In the second group of parks are the scores of smaller reservations that are scattered throughout the city. In their source these go back to the original city plan of imposing a system of radiating avenues upon a system of parallel streets. Intersections between these two systems cut out and left over, as it were, many areas ranging in size from mere plots to the equivalent of several city blocks. These triangles, squares and circles were taken over by the general government and converted into parks and park spaces. Among the most familiar of these are the White Lot, lying directly south of the White House and touching the Mall; Lafayette square, facing the White House to the north; Lincoln Park at 11th and East Capitol streets; Washington Circle at 22d and Pennsylvania avenue; and Meridian Hill Park, facing upon 16th street in the northern section of the city. A park commission, appointed by Congress in 1902, has, through the services of landscape architects and experts in city planning, converted this multitude of separate parks into a system that functions in many recreative ways as an organic part of the civic life. Meridian Hill Park stands as a model of the modern conception of an urban reservation, in its combination of beauty and utility. Washington possesses 392 parks and reservations.

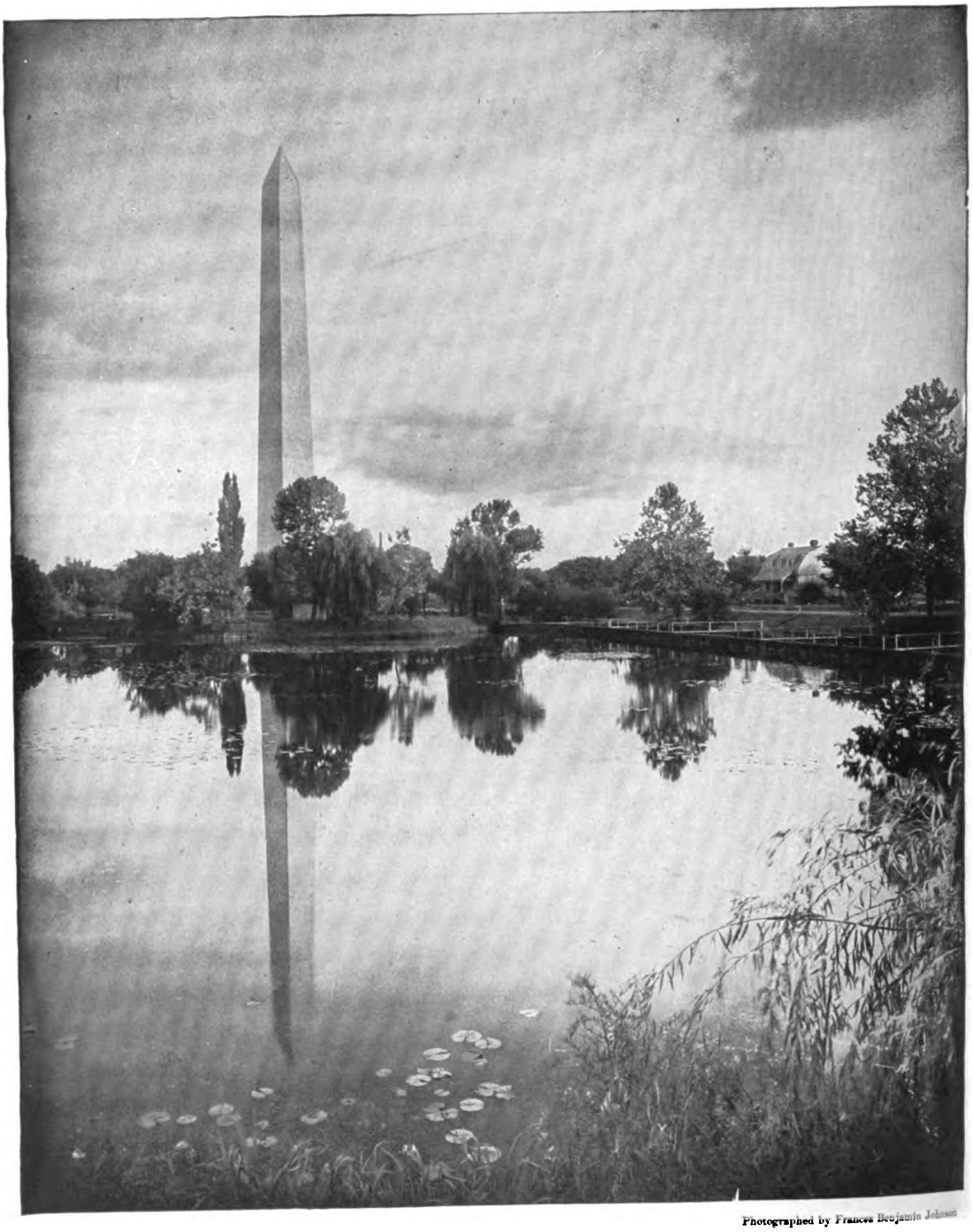
Buildings.— Of all the city buildings, those belonging to the general government stand preeminent in interest. The Capitol, the Library of Congress, the White House, the Treasury and the State, War and Navy Building lead this group. South of these, occupying points upon the Mall, are Lincoln Memorial, Washington Monument, Bureau of Engraving and Printing, Bureaus of Agriculture, Smithsonian Institution and National Museum. North of Pennsylvania avenue and quite within the business section of the city are the government post office, patent office, pension office and the government printing office, which is the largest and most complete printing establishment in the world. The Capitol is the crown of the city's architecture. Seated upon a plateau 88 feet above the river it commands the city and its environs. The dome of the Capitol is from every outlying quarter the first intimation of one's approach to the Federal city. Expressed in figures this building covers 153,112 square feet, with a length of 751 feet, a depth of 350 feet and a height from base to summit of 288 feet. Its cost was $14,000,000. Architecturally it consists of an original central structure crowned by a lofty dome, with long extensions or wings stretching to north and south. Its position, its approaches, the material and design of its architecture make this one of the most magnificent of the public buildings of the world. The law-making centre of the federated States, it possesses two grand legislative halls, that to the north devoted to the use of the Senate, the one to the south to the House of Representatives. The United States Supreme Court also has its council chambers in the Capitol. In September 1793 George Washington laid the cornerstone of the original central building. This is of sandstone quarried on Aquia Creek, Va., a few miles below the capital. In 1814 this building was practically destroyed by the British. By 1827 the Capitol had cost $2,433,844. On Independence Day, 1851, President Fillmore laid the cornerstone of the two extensions, Daniel Webster officiating as orator. Next to the Capitol itself the Library of Congress is the most notably beautiful and impressive structure in Washington. This, at a cost of $6,347,000, was completed in 1897. It contains the great national library; 45 miles of shelving furnish a capacity of 2,200,000 octavo volumes. In addition to the 1,625,318 books, pamphlets and prints that it contains the library has 218,324 other articles deposited for copyright purposes. The White House, so called by reason of the white surface applied to its freestone foundation, is a simple and dignified structure whose historic associations give it a general personal interest surpassing that attached to any other of the public buildings save the Capitol alone. The Treasury, a freestone and granite building erected at a cost of $7,000,000, the oldest of the departmental buildings, is the one example of pure Greek architecture in the city. The State, War and Navy Building, a commodious structure occupying four and a half acres of land, erected at a cost of $11,000,000, is a composite Greek and Roman architecture. The Lincoln Memorial is as truly one of the world's architectural gems as is the Eastern Taj Mahal. For this Congress appropriated $2,595,000. To the east it is joined with Washington Monument by the highest art of landscape architecture. Washington Monument, a shaft 555 feet in height, is built of marble to which almost every country on the face of the earth contributed a stone. An elevator leads to the top of this shaft where a wide view of the city and its environs may be obtained. Since its completion in 1888, 4,479,745 have made this ascent. The new Bureau of Engraving and Printing, situated on the river front to the east of the monument, is counted by experts as a model of industrial architecture. A group of commodious and handsome buildings for the use of the Agricultural Department is in process of construction, two of them having been already completed. The Smithsonian Institution, an impressive building of red sandstone, was built with funds bequeathed for this purpose by an English scientist, James Smithson. The new National Museum, situated on the edge of the Mall to the north of the old museum, was built in 1905 at a cost of $4,000,000. Other important Federal structures are the Naval Observatory and the Bureau of Standards, the latter a very complete plant to the northwest of the city. Notable buildings outside of this government group are the Municipal Building, erected in 1905 at a cost of $1,500,000, as the administrative centre of the District government; Washington Public Library, the $300,000 gift of Andrew Carnegie;

WASHINGTON, D. C.

1 The Capitol

2 The White House

WASHINGTON, D. C.



Photographed by Frances Benjamin Johnston

The Washington Monument

Corcoran Art Gallery; the new building of the American National Red Cross; Continental Hall, erected by the Daughters of the American Revolution, and the Pan-American Union. The last four are situated on the stretch of 17th street lying between Pennsylvania avenue, N. W., and the Mall. The Union Station belongs to this group, as does the new City Post Office, situated beside it. The former was built at a cost of $5,000,000, with an additional $11,000,000 for the construction of its approaches. The buildings of *The Evening Star, The Washington Times, The Washington Post;* that of the Southern Railway; the New Willard, Raleigh and Shoreham hotels; the Masonic Temple and Scottish Rite Supreme Council; Carnegie Institution, and the new Central High School command attention.

Churches.— Washington has some of the finest church buildings in the country. Its places of worship number 358, representing 17 sects, 4 non-sectarian bodies and an unclassified group of 20 miscellaneous congregations. Like the government holdings the vast church properties of the city are exempt from taxation.

Education.— For the direct purpose of coordinating the educational forces of the capital, the Congress, by specific act, has opened its vast sources of information to the use of the higher institutions of learning situated in Washington. More than this, the leading universities of the country have completed a plan for creating a common university centre at Washington in order to take advantage of its unexcelled facilities for advanced studies of history, political science and economics. Certain institutions, special in purpose and unique in character, are located in Washington. The Carnegie Institution of Washington is one of these.

A considerable part of the adult population of Washington is engaged in study of one sort or another. Hundreds of men and women, clerks in the government bureaus, seek by this means to increase their efficiency and further their prospects of advancement. Not only have new institutions risen to meet this condition, but those already established have recast curricula and adjusted school hours to suit the situation. Washington is the seat of five universities. The oldest of these, as well as the oldest institution of learning in the District, is Georgetown University, situated on the heights of the west of Georgetown. Founded in 1789 by Archbishop Carroll of Baltimore, it was developed under the direction of the Jesuit Order of the Catholic Church. George Washington University goes back for its beginnings to 1821. In that year, through the activity of the Baptist Church, it was organized as Columbian College. Reorganized upon a non-sectarian basis, refortified by a more hopeful financial outlook, projected in strict accord with the aims of the modern university and planned to meet the peculiar need of the capital's large body of adult students, this university, with its student force of 3,436 and a faculty of 280, is forging rapidly to the front as an important institution. Howard University was established in 1867 by act of Congress to furnish opportunities for the education of the negro. It possesses both preparatory and collegiate departments. The latter, in addition to its academic foundation, includes schools of theology, law, medicine, dentistry and pharmacy. The Catholic University of America was organized in 1885 under the direction of the Catholic hierarchy of America, though its actual establishment was deferred until the autumn of 1889. It occupies a spacious tract in a northeast suburb of the capital. Here beautiful and dignified buildings are rising with a rapidity that points to the substantial growth of this university. It is one of the leading institutions for the higher study of letters and metaphysics. The American University was organized under the inspiration and, in the main, under the support of the Methodist Church for post-graduate research. In a northwest suburb of the capital, upon the 90 acres owned by the university, two of the two score buildings, projected in its plan, are already serving the purposes of post-graduate work. Near the Catholic University of America is Trinity College, a Roman Catholic institution established in 1900 for the higher education of women, under the direction of the Sisters of Notre Dame de Namur. Beautifully situated in the northeast section of the city is The Columbian Institution for the Deaf and Dumb, or Gallaudet College, incorporated in 1857 by Congress, this body making annual appropriations for its maintenance.

Below these higher and special institutions are the primary and secondary schools of the District. These are private and public, sectarian and non-sectarian. The mild winter climate of Washington; the beauty, the cleanliness and the healthfulness of the city; the brilliant drama of its political and social life; its public facilities for reference and research; all these combine to make the capital fruitful soil for the development of private schools. There are literally hundred of these, many of them conspicuous in excellence, ranging from kindergarten to seminary on the one hand and preparatory school on the other. Washington has a finely progressive public school system. The public school population for 1919 was 62,239. Of this number about two-thirds were white pupils and one-third negroes. This racial fact separates the school population into two parallel systems united at the top by the superintendent of public schools. These two parts are practically identical in aim and opportunity. Each consists of kindergarten, primary and grammar grades, each is supplied with both academic and vocational high schools and each supports a normal school for the training of teachers. The teaching force of the system for 1919 was, officers and teachers, 1,965. A new high school, modern in design and equipment, erected at a cost of $1,600,000, was dedicated in February 1917. Another, built at a cost of $700,000 for the use of negroes, was opened at about the same time. A $400,000 normal school for white pupils and one costing $250,000 for the training of colored teachers indicate further the scale to which the new school buildings are being constructed.

Commerce.— By virtue of its fundamental character, Washington's commercial interests are, generally speaking, limited to local needs. The latest census report for the District of Columbia on this subject shows 514 manufacturing establishments whose total capital is $40,810,200. The number of persons engaged in these is 11,323, of whom 435 are pro-

prietors and firm partners, 2,011 salaried employees and 8,877 wage-earners. The salaries and wages reported from these establishments are $8,068,692. The cost of material is shown to be $12,976,241. The value of the product is $28,978,241. This, less the cost of material, is $16,739,118. Between the reports of 1909 and 1914 a slight falling off appears in the number of these establishments. Within this period, however, there was a gain of 33.6 in capital, of 37.5 in salaries, of 21.6 in wages and of 11.3 in the net value of products. In addition to its manufacturing interests, Washington supports a vast mercantile business. Its department stores are models of this modern industrial expedient. The heart of business Washington is in the northwest section of the city, though the complete business district extends from 6th to 15th streets, east and west, and from Pennsylvania avenue to K street, north and south. The real estate interests of the city are enormous. Out of town investors control large blocks of property and speculation has at times been a conspicuous feature of this business. To the active speculation in real estate Washington owes the development of its handsome suburbs both in the District and in the States immediately surrounding. Over 50 per cent of the property is controlled by the United States government, whose holdings are increased from time to time as the demand for public building sites increases.

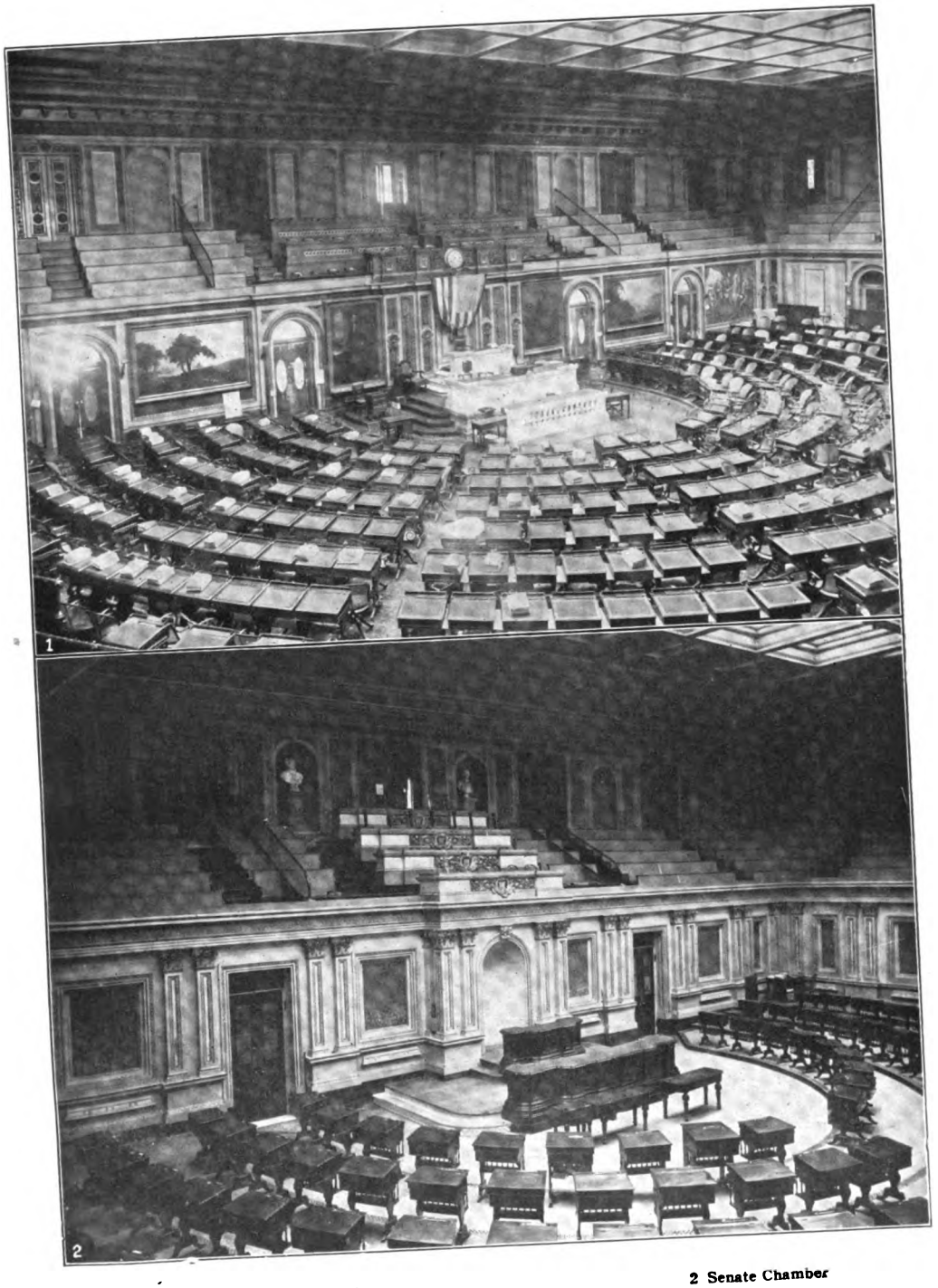
Banks.— The banking interests of the city are important. Reports made to the Comptroller of the Currency, 12 Sept. 1919, by the banks and trust companies of the District show that Washington has 14 national banks whose deposits at that date were, in aggregate, $84,437,000; 24 savings banks with a total deposit of $21,722,000 and six trust companies whose deposits amounted to $55,578,000. The grand total of deposits stood at $161,737,000.

Transportation.—Washington has two street railway companies operating about 220 miles of track within the District. The larger of these companies is the Washington Railway and Electric Company, the other is the Capital Traction Company. The former is a syndicate of eight companies, with eight lines operating within the city and six in the suburbs. The latter controls three important lines. The trackage is, for the most part, double track underground conduit electric. The slight percentage of overhead trolley lines is operated outside the city, connecting in several instances with related lines of Maryland and Virginia. The street railways of Washington have played a conspicuous part in developing the suburbs and outlying sections generally.

Charitable Institutions.— The peculiar conditions governing Washington politically have their effect on its moral government. The humane institutions of the capital are divided into three classes. First, those supported entirely by the combined general and local government; next, those supported partially by the same government combination, and third, those maintained solely by private means. In the first class are Soldiers and Sailors' Temporary Home; the Board of Children's Guardians; Freedman's Hospital for Negroes; Municipal Lodging House; Washington Asylum, including the workhouse, an institution for correction, and also the almshouse, to which the sick of both these institutions are sent, and the Government Hospital for the Insane. In the second class are the Columbia Hospital for Women; Children's Hospital, Providence Hospital, Garfield Hospital and Emergency Hospital; Woman's Clinic; Washington Home for the Incurables; Washington Hospital for Foundlings; Saint Ann's Infant Asylum, and many other organizations of similar aim. The third class includes many institutions and associations which have for their object the caring for sick and incapacitated persons. Washington has numerous private charities and institutions for charitable purposes in connection with the various churches and religious organizations. The charities of the District are superintended by a board of prominent citizens known as the board of charities; appointments to this board are made by the President of the United States.

Government.— The government of Washington is unique. The population is a disfranchised one, therefore the citizens have, practically, no part in its direction and control. On the contrary, it is the voters of the country at large who, through the Congress of the United Sates, control their Federal city. Congress enacts the laws for the government of the District. It also appropriates all sums required to meet both the current administrative expenses and those involved, as well, in measures for the further development and improvement of Washington. This body, moreover, names in specific detail the purposes for which its annual appropriations are made and dictates to the least item the several uses to which these appropriations are to be put. The source of revenue for such maintenance and improvement is two-fold. One-half of the amount required annually is drawn from the Treasury of the United States. This represents the federal obligation toward the support of the Federal territory. The other half is derived from taxes levied on the real and personal holdings of the citizens of the District and from the proceeds of licenses of various sorts. The vast property values within this area belonging to the general government are exempt from taxation. Three commissioners are appointed by the President, "with the advice and consent of the Senate," to administer the District government. Two of these represent the two dominant political parties. The third one is an officer drawn from the engineer corps of the army. A commissioner's term of office is three years. The salary is $5,000. In addition to the District laws enacted by Congress, corresponding to the State laws of other localities, there are municipal regulations taking the place of municipal laws of other cities, formulated by the board of commissioners. For the purpose of administrative convenience, the government business of the District is divided into three groups, over each of which a commissioner has charge. The department of the engineer commissioner is, as a matter of course, a technical one. The remaining two are grouped according to certain convenient lines of agreement. Questions that may arise over carrying out the enactments of Congress are decided by a majority vote of this administrative board. All subordinate officers required to execute the government business of the District are appointed by the

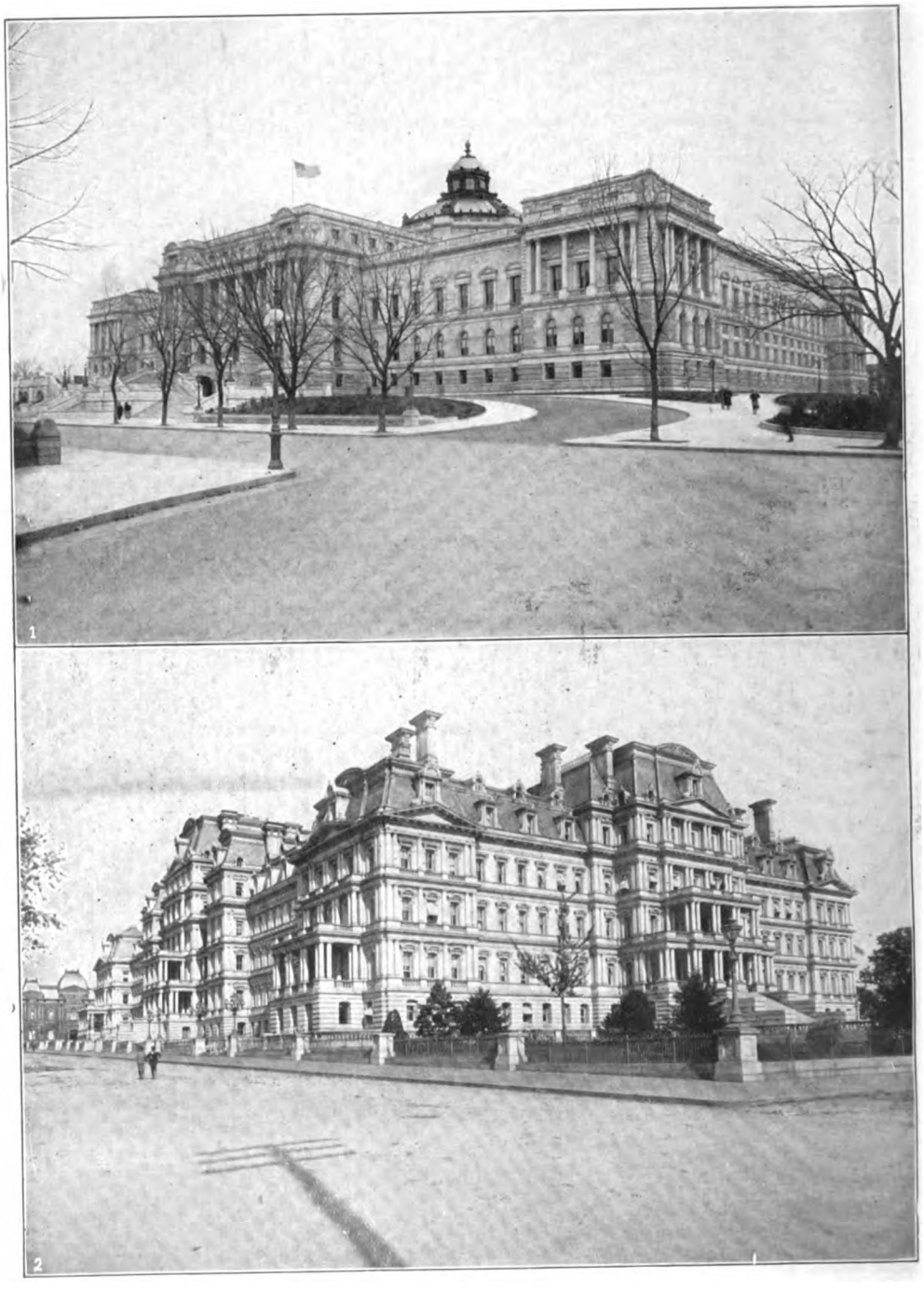
WASHINGTON, D. C.



1 House of Representatives

2 Senate Chamber

WASHINGTON, D. C.



1 Congressional Library

2 State, War and Navy Building

commissioners themselves. Fiscal affairs are in the hands of an assessor, a tax collector and an auditor. These stand as the heads of a compactly co-ordinated fiscal department. Accounts are scrutinized, also, by the auditors of certain Federal departments. Appointed by the commissioners is an officer, not connected with the fiscal department itself, who disburses the funds allotted to the District.

The general safey and welfare of Washington is vested in police and fire departments, in a board of health and sanitation and in the courts. The police department consists of 854 men. Eighty-eight of these are officers, ranking from a major and superintendent of police to sergeant. Police jurisdiction, covering an area of 69.7 square miles, is divided into 13 precincts, each in charge of a lieutenant of police. The fire department consists of 650 men. The head of this organization is a chief engineer, supported by two deputies, eight assistants, a machinist and a fire marshal. The force is divided into 27 steam-engine companies, 12 truck companies, one chemical company and a fire-boat company. In both police and fire departments a conspicuous feature of the training is a well-organized study of methods of prevention as the fundamental idea of municipal protection. Sanitation in its wide range of application to city life is in charge of a health officer, assisted by numerous inspectors, a chemist and a bacteriologist. The commonly recognized functions of this department are now increased by medical and dental inspection of public school pupils and the direction of school nurses, as well as by an oversight of the operations of the Child Labor Law and the Eight-hour Law for women workers. The District of Columbia, though unique in character and limited in area, is, in its human nature, neither unique nor limited. It is necessary, therefore, to maintain a judiciary of comprehensive purpose and applicability. This judiciary consists of five branches. These are the Court of Appeals, the Supreme Court of the District, the Police, Municipal and Juvenile courts. The Court of Appeals considers appeals from the Supreme Court of the District and also from the commissioner of patents. It is presided over by a chief justice and two associates. The Supreme Court, presided over by a chief justice and five associates, is so divided into criminal, equity, circuit and probate courts as to include within its jurisdiction such matters as are generally covered by the Federal, State and municipal courts of other localities. The Police Court consists of two branches, each in charge of a police justice. One branch takes cognizance of minor infractions of United States laws and the other of major violations of municipal regulations. The Municipal Court deals with the multitude of lesser violations of city ordinances. The Juvenile Court, as its name implies, takes cognizance of the offensive of minors against municipal regulations.

History.— In order to secure a permanent capital of the United States, Congress, in July 1790, created a commission with President George Washington at its head, to select a site, not to exceed 10 miles square, within specified points on the banks of the Potomac River. That commission chose the present site of the capital. Several experimental namings of the city and the tract of which it is a part resulted finally in the names Washington and the District of Columbia. Major L'Enfant, a French engineer, serving in the Continental army, superintended the laying out of the city according to a plan outlined by Washington, a plan said to have been derived from the outlines of Versailles, France. Lack of sympathy and support brought about the resignation of the disheartened L'Enfant. Andrew Ellicott, a Pennsylvania engineer, took up the work abandoned by the former. The seat of government was removed from Philadelphia to Washington in 1800. In November of that year the national legislature met for the first time at the new capital. At the outset Congress placed the administrative affairs of the city in the hands of three commissioners; but, dissatisfied with the results of this experiment, in 1802 the city of Washington was made a corporate town with a mayor, board of aldermen and a common council. The first mayor was appointed by the President, but the later incumbents of the mayoralty were elected by the people. Georgetown and Alexandria were included within the Federal district. These, existing as towns prior to the Revolution, remained corporate towns with independent municipal governments. In 1814 the city was captured by an expeditionary force of British soldiers. The Capitol, the White House and other government buildings were destroyed by fire. For the first 70 years of its existence as the capital of the United States, Washington was nothing more than the most forlorn of villages. No serious move toward municipal development and improvement was made. The United States government then, as now, paid no taxes on its property holdings within the District. Appropriations for city maintenance were lamentably meagre and insufficient. This lack of public spirit lost to the District that part of it originally belonging to Virginia, for in 1846, on petition of the citizens of Alexandria, the Virginia section of the Federal territory was receded to that State. In 1871 the creation of a territorial form of government brought the District once more under Federal control. This event marks the beginning of the era of progress which, at the present time, is reaching a ripe maturity. The board of public works, created by Congress at that time, projected, in the face of parsimony and prejudice, a substantial and permanent plan of public improvements. The city was cleared of the most objectionable of the results of a haphazard and makeship expediency. The obliterated lines of city planning set by Washington and L'Enfant were reset. The constructive vision, under which the present city is moving so vigorously forward, began to be apparent. Certain dissatisfactions with the territorial form of government developed, however, and in June 1878 Congress established the commission form of government under which the city is now administered.

Population.— The essential function of the Federal city is that of transacting the enormous bulk of business that the operations of the government impose. This singular municipal functioning determines, to a great extent, not only the fundamental character of the population as a whole, but that of the city itself as well. The government business is, in contrast

to that of huge traffic and manufacturing centres, a physically clean and smokeless business; one, too, that does not exact unsightly congested sections. Washington is, therefore, a city of clear atmosphere, of wide spaces throughout and of general cleanliness of appearance. The core of the population consists of those engaged in the business of the government. The government officials and clerks, alone, constitute a city of about 110,000. The Executive and his Cabinet, members of Congress and of the judiciary, representatives of foreign powers and representatives of the United States army and navy in official administrative capacity greatly increase this number. Each class is materially augmented by official and domestic families. To this basic population are added thousands of unclassified residents on the one hand and on the other hand thousands more who are engaged in such occupations and professions as are required to meet the needs of the whole. In 1920 the population of Washington was 435,428; in 1917, 395,947; in 1916, 437,414; in 1913, 353,297; and in 1910, 331,069. In but a slightly varying relation, two-thirds of these are shown to be of the white race. The remaining one-third are negroes. In 1919 the total assessment of real and personal property was $785,539,666. The budget for the same year amounted to $22,865,676.

The New Washington, 1917–19.—President Wilson's Declaration of War against the Central Powers of Europe in April, 1917, speedily transformed the capital from a city of leisurely government procedures to a highly electrified national centre of war activities. To aid in the enormous speeding up of government machinery imposed by the fact of war itself, men and women from all parts of the country hastened weekly by hundreds and thousands to the capital. By far the larger part of these were absorbed by the urgent clerical demands of the government departments. The smaller part—men and women of exceptional training and experience—were grouped in special bureaus whose common purpose was to accelerate, to co-ordinate, and to control the mobilization of the vast material resources required to support in full efficiency the man power of actual military service. Conspicuous among these bureaus were those taking charge of food, fuel, transportation, and housing. Bolling Field, Camps Meigs, Meade, Humphreys, Leach, instruction and concentration camps, in the immediate vicinity of Washington, stressed the tax upon the city's resources. In less than a year the population was increased by 59,480. This sudden and excessive increase presented promptly the acute problem of house and office accommodations. Every available building, or any part thereof, was commandeered to meet the situation. Besides, there were erected, chiefly along the Mall, temporary office buildings that cover acres of this area. Upon the Plaza between Union Station and the Capitol, the United States Housing Corporation built, also, a series of government hotels for the use of women war workers. Supplementing the activity of these government agencies was the equally enthusiastic and efficient war service of the municipality itself. Twenty thousand men from the District entered military service. Emulative service banners adorned business house and home. The District quotas of Liberty and Victory loans were more than met in a rush of patriotic fervor. The local Red Cross, community centres, the District Council of Defence, the Boy Scouts, welfare organizations of every creed and purpose, joined full-heartedly in the supreme business of "carrying on." Women released men from civil service in a competent substitution. Then the war. Then the armistice. Gradually the tide of transient residents is moving away from Washington and slowly a Washington of new outlook and aim is shaping under the inspiration of its patriotic shareholding in the vicissitudes of a world at war.

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WASHINGTON, Ga., village, county-seat of Wilkes County, on the Georgia Railroad, about 55 miles northwest of Augusta. It is the northern terminus of the Washington Branch Railroad (Georgia Railroad), which connects at Barnet with the main line. Mineral springs noted for their medicinal properties attract here many health-seekers. The surrounding country is devoted mainly to agriculture. The manufactures are flour and lumber products. The principal buildings are the county courthouse, six churches and the schools. It has a high school, opened in 1893, Saint Joseph's Academy (Roman Catholic), public and parish schools and Saint Joseph's Orphanage. There are two banks and two newspapers. Pop. 3,065.

WASHINGTON, Ill., city in Tazewell County, on the Chicago and Alton, the Toledo, Peoria and Western, the Atchison, Topeka and Santa Fé railroads, about 11 miles east of Peoria and 65 miles north of Springfield. It is in an agricultural region and supports a canning factory. It has wagon and carriage works, a furniture factory, flour mill and grain elevators. There are a public high school, established in 1876, a public library, a newspaper and two private banks. Pop. 1,590.

WASHINGTON, Ind., city, county seat of Daviess County, on the Evansville and Indiana and the Baltimore and Ohio Southwestern railroads, about 100 miles southwest of Indianapolis and 20 miles east of Vincennes. It is in an agricultural and coal-mining region, and in the near vicinity there are nine large coal mines. The chief manufacturing establishments are railroad shops, flour mills, foundry and machine shops. There are extensive shipments of coal, grain, livestock, flour and vegetables. The city has four banks, two daily and two weekly newspapers. It has a high school established in 1874, Saint Simon's Academy, public and parish schools and a school library. Pop. about 7,854.

WASHINGTON, Iowa, city, county-seat of Washington County, on the Chicago, Burlington and Quincy and the Chicago, Rock Island and Pacific railroads, about 70 miles southwest of Davenport and 50 miles northwest of Burlington. It is in an agricultural and stock-raising region, with a large horse market. The chief manufacturing establishments are brick and tile works, button factory, marble works, machine shops and creameries. The principal public buildings are the county courthouse, 12 churches, the schools, banks and business blocks. It has a high school, opened in 1867, an academy, public and parish schools and two libraries. There are five banks, two national and three State, and a daily and two weekly newspapers. Pop. 4,544.

WASHINGTON, Kan., city, county-seat of Washington County, on Mill Creek, and on the Chicago, Burlington and Quincy and the Missouri Pacific railroads, about 90 miles northwest of Topeka. It is in an agricultural region, in which the principal products are wheat and corn. Stock-raising is given considerable attention. The industries are connected chiefly with the farm products and the shipment of livestock. There are a high school, a Friends' Academy, two newspapers, two national banks, two private banks and a private business school. Pop. 1,405.

WASHINGTON, La., town in Saint Landry Parish on the Bayou Courtableau, and on the Southern Pacific Railroad, about 168 miles northwest of New Orleans. It is at the head of navigation on the bayou, and has opportunities for shipping freight by water that makes it a commercial centre for a large part of the parish. There are brick and tile works, a cotton twine and yarn factory, cotton mills and a machine shop. The principal shipments are rice, cotton, sugar-cane and corn. The State bank has a capital of $50,000. Pop. 1,405.

WASHINGTON, Me., town in Knox County, about 25 miles east by south of Augusta. It was incorporated in 1811 and called Putnam; in 1823 the name was changed to Washington. The town contains several villages, in all of which there are manufacturing interests; the principal manufactures are barrels, staves, headings, undertakers' supplies, cabinet work and lumber. There are five churches, a high school and district schools. Pop. 814.

WASHINGTON, Mo., city in Franklin County, on the Missouri River and on the Missouri Pacific Railroad, about 55 miles west of Saint Louis. It is in a fertile agricultural region. It has manufactures of lumber, brick, flour, shoes, cob-pipes, leather, musical instruments, agricultural implements and furniture. There are made extensive shipments of packed beef and pork, wheat and corn, and lumber products. There are six churches, public schools, Roman Catholic and Lutheran schools. The city has two banks and two newspapers. Pop. 3,670.

WASHINGTON, N. J., borough in Warren County, on the Morris Canal, and on the Lackawanna Railroad, about 61 miles west of Newark, and 12 miles northeast of Easton, Pa. It is near the base of Scott Mountain, on the south side, and is in an agricultural region. The chief manufacturing establishments are piano and organ factories, silk mills, machine shops and furniture factory. There are six churches, a high school, founded in 1882, public elementary schools and a school library. There are two banks and a newspaper. Pop. 3,250.

WASHINGTON, N. C., town, county-seat of Beaufort County, on the Pamlico River, and on the Atlantic Coast Line Railway, 103 miles northeast of Wilmington, N. C. It is at the head of navigation on the river, has freight connections by water with the Atlantic Coast ports and the West Indies. There are grain elevators and large warehouses; the principal exports are fish, vegetables, flour and fruit. The town also contains barrel and sash factories, lumber and planing mills and steam cotton gins; oyster fishing is an important industry. There are two banks, a daily and two weekly newspapers. The town has a high school, founded in 1899, with a school library. Pop. 7,500.

WASHINGTON, Ohio, county-seat of Fayette County, on Paint Creek, and on the Baltimore and Ohio, the Ohio Southern, the Cincinnati and Muskingum Valley and the Cincinnati, Hamilton and Dayton railroads, about 75 miles northeast of Cincinnati and 30 miles southeast of Springfield. It is in an agricultural region. The principal industrial establishments are boot and shoe factories, soap factory, woolen mills, iron works, machine shop, planing mill and flour mill. There are four banks and five newspapers, including a daily and semi-weekly. There are a public high school, graded elementary schools, a library and private business schools. Pop. 7,277.

WASHINGTON, Pa., borough, county-seat of Washington County, on Chartiers Creek and on the Pennsylvania, the Baltimore and Ohio, the Waynesburg and Washington railroads, about 32 miles southwest of Pittsburgh. It is in an agricultural and coal region. The chief industrial establishments are tube and pipe works, steel works, tin plate and iron works, glass factories, petroleum works, machine shops and foundries. According to 1919 estimate there are over 150 factories, producing annually about $8,500,000 of goods. The principal public buildings are the county courthouse, erected in 1901, and which cost about $1,250,000; the Washington Hospital and the churches and schools. There are 27 churches, representing 13 different denominations. The educational institutions are Washington and Jefferson College (q.v.), Washington and Jefferson Academy, Trinity Hall Military School, Washington Ladies' Seminary, Washington Business College, Practical Commercial

College, 10 public schools, one Roman Catholic parish school and the Citizens' Library. The six banks have a combined capital of $2,000,000. There are three daily, two weekly and a monthly (college) newspaper. The government is administered by a burgess and council of 21 members.

Washington was first settled in 1768 by people from the northern part of Ireland. The place was incorporated as a borough in 1810; in 1901 the boroughs of North and South Washington consolidated with the borough of Washington. Pop. 21,000.

WASHINGTON (D. C.), **Campaign Against and Burning of,** in the War of 1812. In the early summer of 1814 the British determined to make a diversion somewhere on the southern coast in favor of the army on the Canadian frontier. Having decided in favor of Chesapeake Bay, Admiral Sir Alexander Cochrane conducted thither the troops under command of Maj.-Gen. Robert Ross, the landing at the mouth of the Potomac being made on 15 Aug. 1814. At this time Washington was absolutely unprotected save by old Fort Washington and the little flotilla under Joshua Barney (q.v.). Despite Madison's insistence that defensive measures be taken and the appointment 2 July of Brig.-Gen. William H. Winder (q.v.) to command the district, by the time the British began their march inland practically nothing had been done save to gather together about 1,000 regulars and to enroll about 4,000 militia, of which the larger portion was yet to be collected. On reaching Benedict on the Patuxent River, the British army of 4,500 troops was divided into three brigades. On the 20th Cochrane went up the river in search of Barney's flotilla (which was blown up by order of the Secretary of War to prevent capture) while Ross marched by land toward Washington; Capt. John A. Gordon was sent up the Potomac to attack Fort Washington (which was blown up by its commander) and Sir Peter Parker was dispatched to make a demonstration in the Patapsco (Parker being killed on the night of 30–31 August at Mooresfield). Probably never in history has such a march been made. Without cavalry, with hardly a piece of cannon, Ross was allowed to advance unmolested through a well-settled country, abounding in defiles, ravines, streams and the like, whereas 100 men with axes and spades could have delayed him for days; but Ross encountered nothing more serious than a thunderstorm on the road to Upper Marlboro, where he arrived 22 August. The next day he met and dispersed a small American force and that night encamped within nine miles of the capital. On the night of 22 August a brigade of Maryland militia under Gen. Tobias E. Stansbury arrived at Bladensburg, followed the next day by the Fifth Baltimore regiment under Col. Joseph Sterett and a rifle battalion under Maj. William Pinkney (q.v.). Winder had 3,200 men at Old Fields, but instead of sending them to oppose the British at Bladensburg, whither he knew the latter was marching, he ordered them back to Washington, thus leaving the road to Bladensburg open to the British, at which place they arrived about noon of the 24th.

The eastern branch of the Potomac was narrow and shallow at Bladensburg and was spanned by a bridge over which passed the road to Washington. In a ravine near the eastern bank was the village but the western bank was hilly, and in these hills Stansbury had drawn up his troops, flanked on one side by a battery of six guns. Winder then arrived and posted more troops and two batteries in the rear of Stansbury about a mile from the Bladensburg bridge. Shortly after noon the British light brigade, 1,500 strong, crossed the bridge and, clearing the thickets of skirmishers, quickly put the first American line to flight but was checked by the second line. A second brigade of British then charged and turned the left flank of the Americans, who, with the exception of several strong corps, broke and rushed in disorderly flight from the field. Meanwhile Barney, having destroyed his fleet, took his 400 sailors and two 18 pounders toward Bladensburg and on beholding the rout of the Americans established his men and guns on a hillside about a mile from Bladensburg. His first discharge completely cleared the road of the enemy who made several attempts to crush the little band. Finally they divided their forces, attacked Barney on both flanks and the rear, and through sheer weight of numbers soon compelled the sailors to flee, leaving Barney a prisoner in British hands. By 4 o'clock not a vestige of the American army was in sight; it had lost 26 killed and 51 wounded, while Ross officially reported his loss at 64 killed and 18 wounded, though probably he lost nearer 500. About dark the British entered Washington and in retaliation for real and alleged American depredations in Upper Canada, set afire and destroyed the Capitol building, which then contained the library of Congress. Ross then fired the President's house and the Treasury building, and the next day continued the work, so that by noon the departments of State and War, the printing office of the *National Intelligencer*, the bridge over the Potomac, several ships in the navy yard and a few small houses were in ruins. A terrific tornado passed over the city shortly after noon, whereupon, leaving the other buildings marked out for destruction and abandoning his wounded, Ross withdrew from the scene of devastation and marched to Upper Marlboro, where he reembarked his troops to make the attack on Baltimore (q.v.).

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and Rines, 'The United States' (Vol. VI, pp. 22–33).

WASHINGTON (D. C.), **Early's Attempt on.** On 13 June 1864 General Early marched from Gaines' Mills, under orders from General Lee, to attack and drive General Hunter from the Shenandoah Valley and then cross into Maryland near Leesburg, or at or above Harper's Ferry, and threaten Washington, thus hoping to draw troops from Grant's army. Hunter's failure at Lynchburg (q.v.) and his retreat toward the Kanawha left the Shenandoah Valley open to the movement into Maryland, and 27 June Early concentrated his army at Staunton, moving next day down the valley and reaching Winchester 2 July. He broke the railroad west of Martinsburg, drove General Sigel from that place 3 July and across the Potomac to Maryland Heights (q.v.), crossed the Potomac at Shepherdstown Ford, demonstrated on Sigel, then crossed South Mountain by Turner's, Fox's and Crampton's Gaps and attacked and defeated Gen. Lew Wallace on the Monocacy (q.v.), 9 July, Wallace retiring on the Baltimore road, leaving open to Early the road to Washington. Early had under his command the four infantry divisions of Rodes, Ramseur, Gordon and Echols, Ransom's division of cavalry and Long's three battalions of artillery, in all about 15,000 men and 50 guns. On the morning of 10 July Early marched on the direct road to Washington and bivouacked at night four miles north of Rockville. McCausland's cavalry brigade, which had preceded him, drove from and beyond Rockville, about 600 Union cavalry, under command of Major Fry, of the 16th Pennsylvania cavalry. During these movements, from the time of entering Maryland, the Confederate cavalry was industriously engaged in gathering up horses, sheep, hogs and cattle of all kinds, grain, bacon and subsistence of every kind, and shoes and clothing. The livestock was driven across the Potomac. Bradley T. Johnson's cavalry brigade, moving from Frederick toward Baltimore, occupied several towns on the way and destroyed the Northern Central Railroad at Cockeysville.

Another cavalry detachment stopped a train of cars at Magnolia Station, on the Baltimore and Ohio Railroad, and burned the train and Gunpowder River bridge. Wires were cut and communication with the north severed. At dawn, 11 July, Early marched through Rockville, McCausland, who had the advance, took the Georgetown road and by 9 o'clock was stopped by Colonel Lowell, with a small cavalry force, in advance of Fort Reno. He formed Early's right. The main force, preceded by Imboden's cavalry brigade, marched for the Seventh Street road, running past Silver Spring, while Jackson's cavalry brigade moved on the left flank. Imboden's cavalry drove a small body of Union cavalry into the works on the Seventh Street road and, dismounting, deployed as skirmishers. Early rode ahead of his infantry and arriving in front of Fort Stevens at noon, discovered that the works were but feebly manned. The northern defenses of Washington consisted of a series of detached works, at intervals of 800 to 1,000 yards, generally connected by rifle-pits, and mounting 400 heavy guns with a large range of fire. The one in Early's front, west of Seventh Street road, was Fort Stevens, with Fort De Russy on its left, from which it was separated by a deep ravine, through which ran Rock Creek; the one on the right was Fort Slocum. Fort Stevens had been furnished with a powerful armament, mostly of siege guns, well protected by embrasures and traverses. It had an extensive bomb-proof; and a hollow in the rear was capable of sheltering large bodies of men from artillery fire. General Augur, commanding the defenses, had collected some heavy artillerymen and a miscellaneous force of militia, convalescents, invalid corps, marines and sailors, department clerks and other employees of the government, and placed them under command of Gen. A. McD. McCook. The whole force, prior to the arrival of the Sixth corps, numbered about 8,000 men. The line immediately north of the city was garrisoned chiefly by the 150th and 151st Ohio regiments of 100 days' men, two or three companies in each fort, and by detachplaced them under command of Gen. A. McD. Hardin's division of the 22d corps, whose two brigades held the entire line of 16 forts from the Potomac, above Chain Bridge, to the Eastern branch.

The cavalry, under command of Colonel Lowell, consisted of detachments of the Second Massachusetts, Eighth Illinois and 16th Pennsylvania, in all about 1,000 men, and was in advance of the works from the Potomac to Fort Stevens. When Early, who was within sight of the dome of the Capitol, had seen the works, thought to be feebly manned, he ordered Rodes' division into line, in front of Fort Stevens, and, about 1.30 P.M. when the skirmishers were within range, the Union artillery in Fort Stevens, under Captain Dupont, opened a rapid fire, clouds of dust appeared rising behind the fort, and soon a Union column was seen — a body of quartermasters' employees and 600 dismounted cavalry, under Maj. G. G. Briggs of the Seventh Michigan, filing into the works on the right and left of the fort, whose skirmishers advanced to the front, before whom those of Rodes fell back, after approaching within musketry range of Fort Stevens and wounding men on its parapet. This dashed Early's hope of getting possession of the works by surprise and he consumed the rest of the day in reconnoitering. Meanwhile a substantial and timely reinforcement had arrived to strengthen the Union defense. General Grant had doubted whether Early had anything more than cavalry in Maryland, but had sent Ricketts' division to Baltimore, and, on the night of the 9th, a few hours after Wallace's defeat on the Monocacy, ordered General Wright, commanding the Sixth corps, to march his other two divisions from the lines before Petersburg to City Point, 14 miles, where he arrived at daylight of the 10th, took transports and by 2 P.M. of the 11th arrived at Washington, where, just arrived, was a steamer with 800 men of the 19th corps, who, having reached Hampton Roads from New Orleans, had been sent directly to Washington. President Lincoln was on the wharf to greet the troops on their arrival. Wright quickly landed his troops and marched them to near

Fort Stevens, where he bivouacked, sending 900 men to relieve those that had been thrown out in front of Fort Stevens; being old soldiers, they immediately intrenched. Late in the evening 1,500 quartermasters' employees and 2,800 convalescents, under Col. Frank Price, from nearly every regiment in the Army of the Potomac, took position in rear of Fort Slocum and in the rifle-pits on either side of it.

After nightfall Early called a council of his division commanders and a conclusion was arrived at to assault the Union lines at daybreak next morning, the 12th, but during the night a dispatch was received from Bradley T. Johnson, near Baltimore, that two corps had arrived from Grant's army, and this caused Early to delay the attack until he could again examine the works. As soon as it was light enough to see he rode to the front and saw that the works were lined with troops, and gave up the idea of capturing Washington, but decided to remain in front of the works during the day and retire at night.

At dawn of the 12th Early was seen in position, with part of his command, at the Rives House, on the right of Silver Spring road, on rising ground, surrounded by shade trees, with an orchard near, giving cover to sharpshooters, who commanded the Union skirmish line from this point and also from McLay's House on the left of the road. Wheaton's brigade of the Sixth corps was thrown out on the skirmish line in front of Fort Stevens and instantly the Confederate sharpshooters began their work. Skirmishing continued until the middle of the afternoon, when Wright pushed out Bidwell's brigade of the Sixth corps, formed in two lines with orders to join Wheaton in an attack upon the Confederates at the Rives House. The guns of Fort Stevens and Fort Slocum opened a rapid fire and at a signal from Wright, who stood on the parapet of Fort Stevens, President Lincoln at his side, Bidwell moved forward, and with Wheaton's brigade, which formed an advance line, drove the Confederates from the Rives House and, after a sharp fight, from rising ground beyond, and back for a mile upon Rode's main line, where farther advance was stayed, but the skirmishing was kept up until late in the night, and the ground gained intrenched. The engagement was witnesses by Cabinet officers, other officials and some ladies from behind the parapet of Fort Stevens, where also the President was ordered by General Wright, when the engagement opened and men were being wounded on the parapet. The Union loss was over 200, of whom 150 were of Bidwell's brigade, including two regimental commanders of the brigade killed and others wounded.

On the left, near Fort Reno, Lovell's 900 cavalry had heavy skirmishing with McCausland's cavalry brigade, and drove it back on the Georgetown road until infantry came to McCausland's support. That night Early fell back through Rockville, marched all night and halted near Darnestown. Lovell's cavalry pushed after Early on the morning of the 13th as far as Rockville, where it was attacked and driven back by McCausland, with a loss of 30 killed and wounded, after taking 38 prisoners. At noon Wright marched after Early with two divisions of the Sixth corps, followed by Emory's division of the 19th corps. Early resumed his march from Darnestown and crossed the Potomac at White's Ford, near Leesburg, on the morning of the 14th, heavily laden with the spoils of war. The Union loss during the three days was between 350 and 450. Early left 30 dead and 70 wounded on the field and lost over 200 prisoners, not including his wounded. The loss on both sides was comparatively small, but the event is memorable in that it was the only occasion in the history of the country where hostile armies met so near the seat of government, and men fell in battle within the boundaries of the District of Columbia. Consult 'Official Records' (Vol. XXXVII); Early, 'The Last Year of the War for Independence'; The Century Company, 'Battles and Leaders of the Civil War' (Vol. IV).

E. A. CARMAN.

WASHINGTON, Fort. See FORT WASHINGTON.

WASHINGTON, Mount, in New Hampshire, the highest peak of the White Mountains, and the highest point in the northeastern part of the United States. Its altitude is 6,293 feet; it is east of Crawford Notch. Granite is the chief rock formation of the whole mass. On the east side there are many deep gorges and several on the north; on the west the slope is steep. The summit is rocky, with scanty vegetation compared with the lower slopes and base, where large trees are numerous. For many years a carriage road has extended to the top and since 1869 a rack-and-pinion railroad has enabled tourists to ascend to the summit with ease. A United States meteorological station and a large hotel are on the summit.

WASHINGTON, State College of, a co-educational State institution situated at Pullman, Wash., founded in 1890 under the National Land Grant Act as the Washington State Agricultural and Mechanical College, and opened in 1902. The institution now offers courses in economics, civil, mechanical and mining engineering, mathematics, chemistry, botany, zoology, agriculture, horticulture, forestry, physics, geology mineralogy and education, and offers special courses in agriculture, pharmacy, veterinary science and business. The college has a Federal grant of 180,000 acres of land, an income of $90,000 annually from trust funds and receives State appropriations of about $400,000 annually. There are about 150 instructors and 1,600 students. The president in 1918 was Dr. E. O. Holland.

WASHINGTON, Treaty of, a treaty between Great Britain and the United States, signed 8 May 1871. Under its terms the Alabama claims, the San Juan boundaries and certain fisheries disputes were settled by arbitration. See TREATIES.

WASHINGTON, University of, the State university located at Seattle, Wash. The first steps toward the establishing of the university were taken by the first territorial legislature in 1854, which petitioned Congress for a grant of land; an appropriation of two townships was shortly afterward made by Congress. In 1855 the legislature organized the Territorial

University of Washington in two equal institutions, one located at Seattle, the other on Boisfort Plains, Lewis County; but as no further steps were taken toward the establishing of the university, the legislature united the two institutions, and fixed the location in Cowlitz Farm Prairie, Lewis County. This shifting policy led the people of Puget Sound region to incorporate another university, and the fear of thus duplicating institutions led the legislature to definitely fix the location of the University of Washington at Seattle, and to appoint a board of commissioners to select and sell the granted lands and establish the university. The main building was completed in 1861 and the university opened to students in the same year. In its earlier years the university met with many difficulties, chiefly financial, as the Territory appropriated no money for its maintenance until 1879; its progress was slow until 1893, when the legislature provided a new site and appropriation for building purposes. Since that time the growth of the university has been both continuous and rapid, and it has taken its place as the real head of the educational system of the State. The Board of Regents consists of seven members appointed by the governor, with the approval of the senate, for a term of six years. The university includes the following divisions: (1) The College of Liberal Arts; (2) the College of Science; (3) the College of Education; (4) the College of Business Administration; (5) the College of Engineering; (6) the College of Fine Arts; (7) the College of Forestry; (8) the College of Mines; (9) the College of Naval, Military and Aeronautical Science; (10) the College of Pharmacy; (11) the Library School; (12) the School of Journalism; (13) the School of Law; (14) the Graduate School; (15) the University Extension Service. Beginning with the year 1917–18 the university adopted the four-quarter plan, in accordance with which the academic year is divided into four quarters of approximately 12 weeks each. The university is in session practically continuously, except for the month of September. The requirement for entrance to the university is graduation from a standard four-year high school course, except in the case of special students who must be 21 years of age and show evidence of ability to profit by the special work desired. The total university enrolment in the pre-war year of 1916–17 was 4,828; in 1917–18 the enrolment was 3,871. During the first 18 months of the war the university sent forth from its student body, alumni and faculty 2,069 men for active military service. The enrolment of the university by schools and colleges in 1916–17 was as follows (the numbers in parentheses are the enrolments for 1917–18): Graduate School, 202 (116); College of Liberal Arts, 1,629 (1,311); College of Science, 452 (358); College of Education, 247 (201); College of Engineering, 521 (377); College of Fine Arts, 200 (193); College of Forestry, 80 (47); School of Law, 173 (54); College of Mines, 119 (53); College of Pharmacy, 77 (53); Summer Session 1916, 1,386 (1,245). The Associated Students of the University of Washington have charge of all athletics, the Co-operative Book-store, the *University Daily*, the Glee Club and the Dramatic Association. The student members of the board of control of the associated students act as a committee on the student government. The university has 19 fraternities and 17 sororities, and many local clubs. The campus comprises 450 acres, lying between lakes Union and Washington. The plan for the arrangement of the buildings is a modification of the quadrangle, the buildings devoted to liberal arts being arranged in one quadrangle and those devoted to the applied sciences in another. Scientific laboratories are well equipped with modern apparatus, and the library in 1918 contained 87,542 volumes.

WASHINGTON ACADEMY OF SCIENCES, a society for the promotion of scientific learning, organized in 1898. It is an organization uniting a number of learned societies of the city, including the Anthropological Society, the Biological Society, the Geological Society, the National Geographic Society, the Medical Society of the District of Columbia and the Philosophical Society. The last-mentioned, organized in 1871, is the oldest of the societies composing the academy. The academy and the majority of the separate societies publish 'Proceedings.'

WASHINGTON BARRACKS (formerly WASHINGTON ARSENAL), a military post at Washington, D. C., established as an arsenal in 1803 at Greenleaf Point, a peninsula at the confluence of the Potomac and Anacostia rivers. It originally occupied 28½ acres of ground, later increased to the present 69 acres, which are beautifully laid out. The buildings were destroyed by the British in 1814, and were rebuilt in 1815. In the Civil War it was still an arsenal and was the depot of stores for the Army of the Potomac; and in 1865 the execution of the conspirators in the assassination of President Lincoln took place at the United States Penitentiary here. Afterward the penitentiary was removed, its site being added to the ornamental grounds. The arsenal was abolished in 1881 and the former storehouses were converted into barracks occupied as an artillery post and subsequently known as the Washington Barracks. Since 1901 the barracks have been occupied by engineering troops. The United States Army War College and the engineering school are located here. Large quantities of bridge equipment, together with engineering tools and scientific instruments, are stored at the barracks.

WASHINGTON COLLEGE, located at Chestertown, Md. It was chartered as a college in 1782, being the oldest institution of collegiate grade in the State. It was the direct successor of an academy with which the Free School of Chestertown (founded in 1723) had been merged and was established as a part of the proposed University of Maryland. General Washington gave his consent to the naming of the institution for him and became one of the board of visitors. The college is non-sectarian and receives an appropriation from the State. It is open to women. The college offers two collegiate courses, classical and scientific, leading to the degrees of A.B., and B.S., and two years of preparatory work. There is a wide range of electives. By means of gymnasium work, athletics and setting-up exercises special emphasis is laid upon physical health and vigor.

There are a number of scholarships established by the State. The plant includes a large campus of unusual beauty, a new main building, a gymnasium, a dormitory for women, three dormitories for men, a heating plant and a fine athletic field.

WASHINGTON COLLEGE, located in Washington County, Tenn. It was chartered as an academy in 1783, and as a college in 1795, and was the first institution of higher learning west of the Alleghany Mountains. During the Civil War, and for a short time after the war, the resources of the college were seriously crippled, and only a course of academic grade was offered. Two-thirds of the board of trustees must be Presbyterians, but the college is not otherwise under denominational control. Two college courses are offered, the classical, leading to the degree of A.B., and the scientific, leading to the degree of B.S. There are also courses in music and oratory, a preparatory department with an auxiliary department giving instruction in domestic science and an industrial department (established in 1892–93) affording opportunity for students to pay a portion of their expenses by manual labor. The campus, consisting of 16 acres, occupies an elevated site, commanding a view of the surrounding mountains; the buildings are the recitation hall, the boys' dormitory and the girls' dormitory. Salem Church is used as the college chapel. The students in 1918 numbered 120 and the instructors 12.

WASHINGTON COURT HOUSE, Ohio, city and county-seat of Fayette County, 38 miles southwest of Columbus, on the Cincinnati, Hamilton and Dayton, the Pennsylvania, the Baltimore and Ohio Southwestern, and the Detroit, Toledo and Ironton railroads. It is an important livestock market, has a canning industry and manufactures boots, shoes, flour, soap, stoves, furniture and fertilizers. Pop. 7,277.

WASHINGTON ELM, an elm tree at Cambridge, Mass., situated northwest of the common, under which General Washington took command of the American army 3 July 1775.

WASHINGTON AND JEFFERSON COLLEGE, located at Washington, Pa. Three classical schools were conducted by three ministers near Washington, the earliest opened in 1780, and out of these schools grew the academies and colleges from which came the present institution. In 1787 an academy was founded at Washington under the leadership of three Presbyterian ministers; in 1790 the courthouse where the academy held its sessions was burned, and academy suspended, some of its patrons in 1794 chartered a new academy at Canonsburg, and the opening of this school stimulated the reopening of the Washington Academy; the Canonsburg school was chartered as Jefferson College in 1802 and the Washington school as Washington College in 1806. Many attempts were made to unite the two institutions, but all failed until 1865, when the union was accomplished under the present name. Even then rivalry existed as to the location of the college and a compromise was effected by having a part of the faculty and students at Canonsburg and the rest at Washington; in 1869, however, the college was definitely located at Washington. The control is vested in a self-perpetuating board of trustees of 31 members. The college offers three courses leading to degrees, the classical (with the degree of A.B.), the Latin scientific (degree of B.S.), and the French scientific (degree of B.S.). There is also a course in civil engineering. To aid students preparing for the professions courses are suggested preparatory to the study of theology, law and medicine; Hebrew is included in the curriculum for the benefit of those studying for the ministry. There is also a preparatory department. There are a number of scholarships endowed and a large loan fund for students. The college occupies 16 acres within the limits of the town. The property and endowment of the college, including amounts pledged at the centennial celebration of 1902, amounts to considerably more than $1,500,000. The average attendance is about 400 and the faculty numbers 21. Of the alumni about 1,650 have entered the ministry, 950 the law and 460 the medical profession. Of those who have obtained some distinction there have been four members of the Cabinet, 11 governors of States, 10 United States senators, 70 presidents of colleges and universities, 20 State Supreme Court judges, 2 bishops of the Protestant Episcopal Church and 28 moderators of general assemblies.

WASHINGTON AND LEE UNIVERSITY, an institution of higher learning, located at Lexington, Va., midway between the Blue Ridge and the Alleghany Mountains, which are here about 15 miles apart. Founded in 1749 as Augusta Academy, about 15 miles north of its present site, its name was enthusiastically changed to Liberty Hall Academy in the spring of 1776. The institution was moved to Lexington in 1780 and formally chartered in 1782, under an independent and self-perpetuating board of trustees. Liberty Hall Academy was endowed by George Washington with a gift of $50,000, and by him authorized to change its name to Washington Academy, which was again changed in 1813 to Washington College. During the Civil War, the work of the college was discontinued, the student body enlisting in the Confederate army under name Liberty Hall Volunteers. The college property was much injured during Hunter's raid in the Valley of Virginia in June 1864, for which Congress granted remuneration 30 years later.

On 4 Aug. 1865 Gen. Robert E. Lee was elected president, and was formally installed on 2 October. During his devoted and efficient administration of five years, the growth of the college in numbers, curriculum, financial resources, equipment and influence was phenomenal. In 1866 the Lexington Law School, founded by Judge Brockenbrough in 1849, became "The School of Law and Equity of Washington College." In 1871, soon after General Lee's death, the name of Washington College was changed to the present corporate title — "The Washington and Lee University." The university property consists of about 140 acres of land and 25 buildings. The Lee Mausoleum, in the rear of the Lee Memorial Chapel, contains Valentine's recumbent statue of Lee, and in the crypt below are the remains of the whole Lee family, including "Light

Horse Harry» Lee, the father of Robert Edward. The Bradford Art Gallery bequeathed to the university by Vincent L. Bradford of Philadelphia and the Lee collection of portraits of the Lee and Washington families are housed in the library and the Lee Chapel. The latter contains Peale's portraits of Washington and Lafayette, with other memorial portraits, busts and tablets. The principal benefactors of the university have been George Washington, its practical founder, his friend and follower, John Robinson, the Society of the Cincinnati, Cyrus H. McCormick, W. W. Corcoran, Thos. S. Scott, Andrew Carnegie, Vincent L. Bradford, Robert H. Bayley, Wm. H. Reid, Mrs. S. P. Lees, Mrs. Sophie Newcomb, Judge Thos. H. Harvey, George Peabody and Mr. and Mrs. Robert Parker Doremus.

The university organization includes (1) the School of Arts, (2) the School of Applied Science, (3) the School of Commerce, (4) the School of Law. The courses in the School of Arts are divided into three groups: (1) Languages, (2) humanitarian studies, (3) mathematics and science For the A.B. or B.S. degree, a prescribed amount of study must be done in each group. Otherwise, the courses are entirely elective and modern languages may be substituted for classical. Although distinctively Christian in its traditions and ideals, the university is entirely independent, having no official connection with Church or State. Its patronage is distinctly national, as its support has been, more than two-thirds of its 625 students coming from other States than Virginia. Its methods of discipline and self-government have been known for generations as the «Southern Honor System.»

In recent years, the university has adopted a universal and compulsory system of training in hygiene and physical education lasting during a student's whole course and a necessary requirement for any degree. The United States maintains at the university a reserve officers training corps in charge of a professor of military science and tactics. Military training, however, is optional, no student being required to take it.

The library of the university contains 55,000 volumes and its present endowment, including the Doremus residuary legacy, amounts to about $3,000,000.

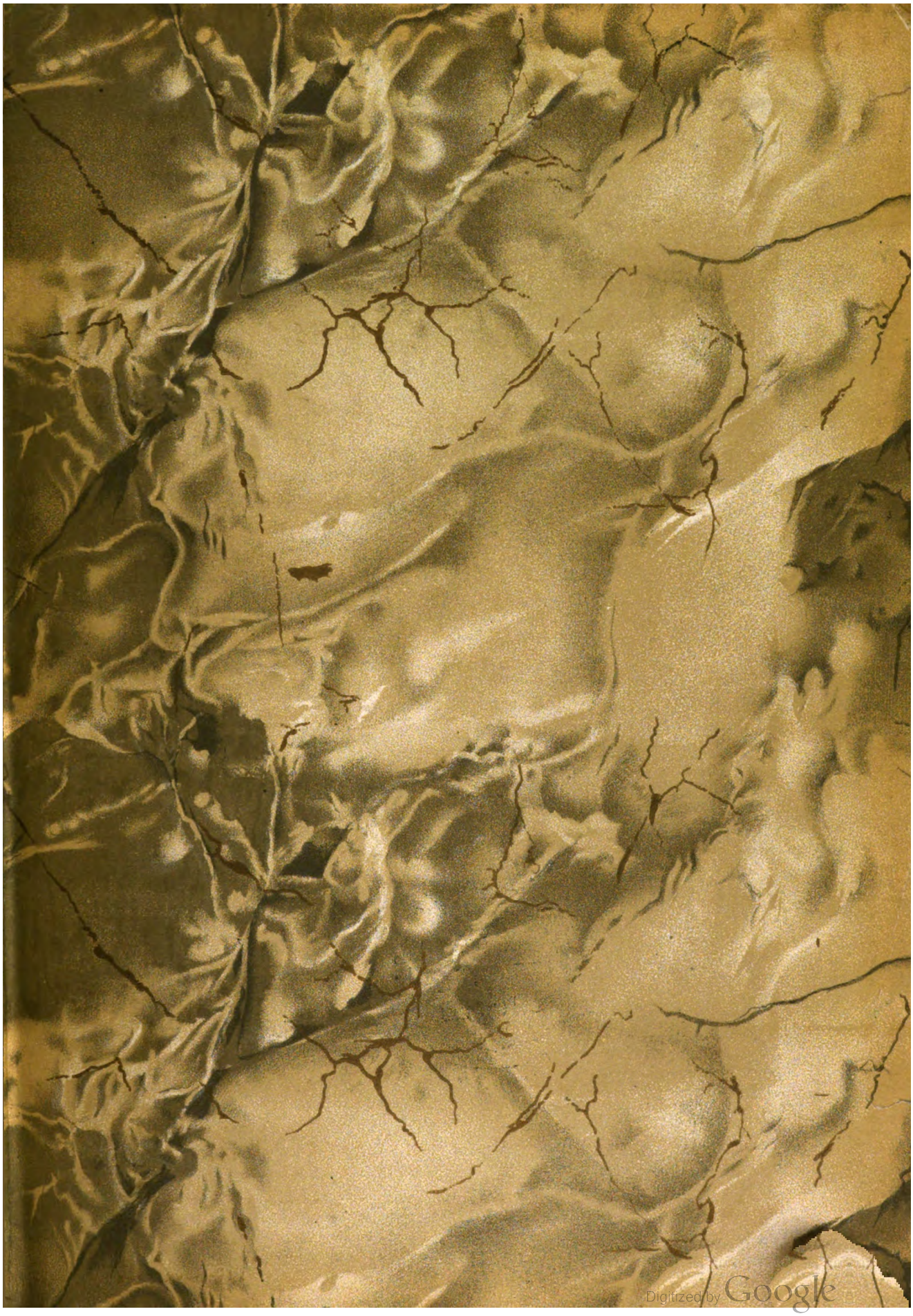
WASHINGTON UNIVERSITY, Saint Louis, Mo., founded 1853, is a non-sectarian institution, under the control of a self-perpetuating board of directors of 17 members. Besides the college there are schools of engineering, architecture, commerce and finance, botany, law, medicine, dentistry and fine arts. The course in the college is largely elective, particularly the work of the junior and senior years. The school of engineering offers courses in civil, mechanical, electrical and chemical engineering. The university confers the following first degrees: A.B., B.S., B.Arch., B.S.C.; for graduate work the following degrees: A.M., M.S., M.Arch., M.S.C., and Ph.D.; in the professional schools: LL.B., M.D., D.D.S.; and after not less than three years of successful active practice, the degrees of civil, mechanical, electrical and chemical engineer. The productive funds of the university amount to nearly $12,000,000; the library contains 165,000 volumes; the students' annual enrolment is over 1,900 and the faculty numbers 228. See also Saint Louis — *Education.*

WASHITA, wŏsh'ĭ-tą, or **OUACHITA,** a river which rises in Polk County, Ark, and flows east, then south into Louisiana, entering the Red River in the east central part of the State. The chief tributaries are Saline, La Fourche. Tensas and Little Missouri. The part of the river below the point where the Tensas enters is often called the Black River. The Washita is navigable throughout the year as far as Camden, Ark., and for about eight months to Arkadelphia, Ark. The total length is about 600 miles.

WASHITA, Battle of, an engagement fought on the banks of the river of that name in Indian Territory on 27 Nov. 1868, in which Gen. George A. Custer, in command of the Seventh cavalry inflicted a crushing defeat upon the Indians, 103 of their warriors being killed. The immediate result was the return of the entire tribe of Cheyennes to their reservation. The chief Black Kettle (q.v.) was killed in the encounter.

WASHO-INDIANS, a linguistic stock of North American Indians, consisting of the Washo tribe, whose original range extended from Reno, on the line of the Central Pacific Railroad in western Nevada, to the lower end of Carson Valley. The vicinity of Carson is now the chief seat of the tribe and here and in the neighboring valleys there are about 200 living a parasitic life about the ranches and towns.

WASMANN, väs-män, **Erich,** Austrian biologist: b. Meran, Tyrol, 29 May 1859. He was educated in the gymnasia at Meran Hall and Feldikirch, at Jesuit scholasticates and the University of Prague. In 1875 he entered the Society of Jesus and was ordained to the priesthood in 1888. He has spent many years in biological study and research, and has taken part in many zoological and entomological congresses. His works are 'Der Trichterwickler' (1884); 'Atemeles und Fomechusa' (1888); 'Vergleichende studien über Ameisengäste' (1889); 'Zusammengesetzte Nester und gemischte Kolonien der Ameisen' (1891); 'Kritisches Verzeichnis der myrmekophilen und termitophilen Arthopoden' (1894); 'Zur neueren Entwicklungstheorie in Deutschland' (1896); 'Instinkt und Intelligenz im Tierreich' (3d ed., 1905); 'Vergleichende Studien über das Séelen leben der Ameisen und der höheren Tiere' (2 ed., 1900); 'Die psychischen Fähighkeiten der Ameisen' (2d ed., 1909); 'Neue Dorylinengäste' (1900); 'Termiten von Ceylon' (1902); 'Zur näheren Kenntnis des echten Gasverhältniss' (1903); 'Dorylinengäste vom Kongo' (1904); 'Die moderne Biologie und die Entwicklungstheorie' (3d ed., 1906); 'Menschen und Tierseele' (5th ed., 1910); 'Ursprung der Sklaverei bei Ameisen' (1905–10); 'Ameisen und Ameisengäste von Luxemburg' (1906–09); 'Kampf um das Entwicklungsproblem' (1907); 'Der biologische Unterricht' (1908); 'Entwicklungstheorie und Monismus' (1910); Ameisen und ihre Gäste' (1911); 'Beiträge zur Kenntnis der Termitophilen' (1912), and contributions to scientific reviews.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